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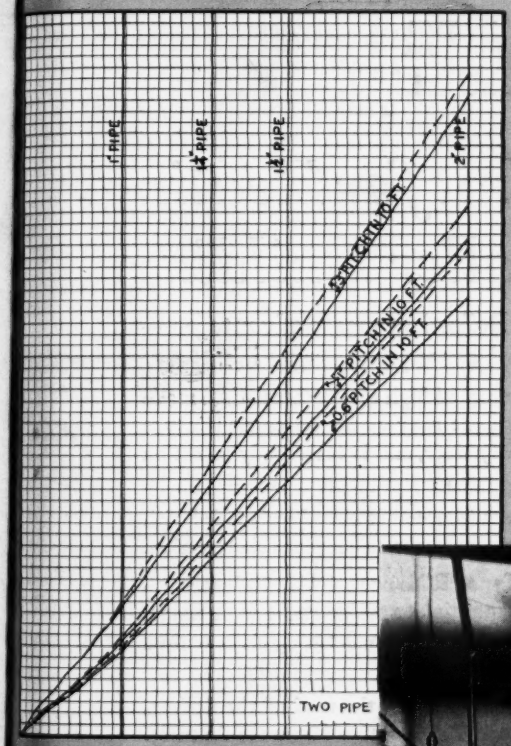
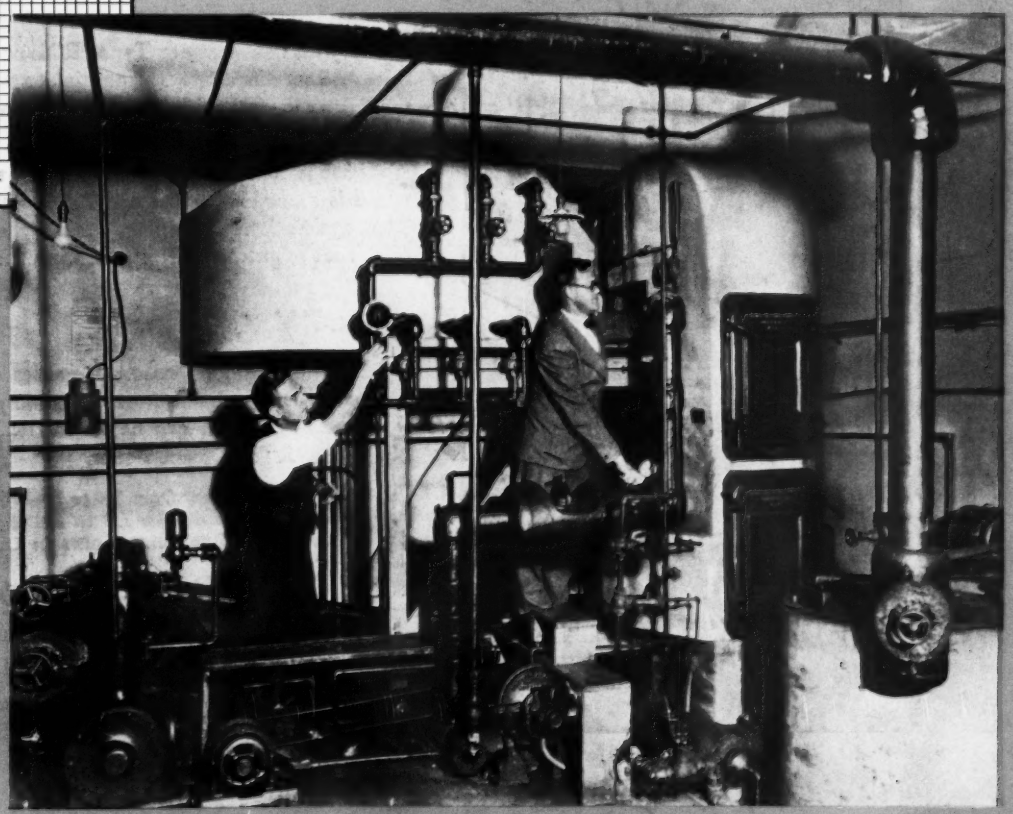
Plumbing & Heating Contracting and Merchandising



Progress *in* Research *in the* A. S. H. V. E. Laboratory

JANUARY 25, 1930



A scene in the A. S. H. V. E. Laboratory, taken during the work on one of the many problems studied.

The NEW KEWANEE STEEL BOILER

A Highly-Efficient Unit for Heating Homes and Smaller Buildings

THE Kewanee Type "R" Residence Boiler has many advantages—*in addition* to its greater strength and consequent longer life.

The shell has extra thickness, of high quality steel plate made into one homogeneous piece. It may easily be carried into a building through any ordinary door, and is then ready to set on the base.

The base, of very heavy cast iron, comes *already assembled* with grate bars in place. Each grate bar rocks on a removable trunnion.

Every unit of Kewanee Type "R" is **practically indestructible.** All castings are substantial to withstand rough usage, the lighter parts being of malleable iron for toughness as well as strength.

Notice particularly the Crown Sheet, the roof of the firebox, which is arched right-side up (a distinctive Kewanee feature). That makes it self-draining, shedding any sediment or loose scale that might be precipitated from the water.

for Every Fuel—Coal, Gas or Oil

Every kind of solid fuel, coke, all grades of soft or hard coals, their briquette or powdered forms; also any liquid fuel oils, and natural or commercial gas can be *burned with high efficiency* in the Kewanee Type "R" Residence Boiler.

In sizes to heat from 370 to 1960 square feet of steam, and from 590 to 3140 square feet of water radiation. Details in Catalog 88.

Now there's a KEWANEE *to heat* Every Size *and* Type *of* Building

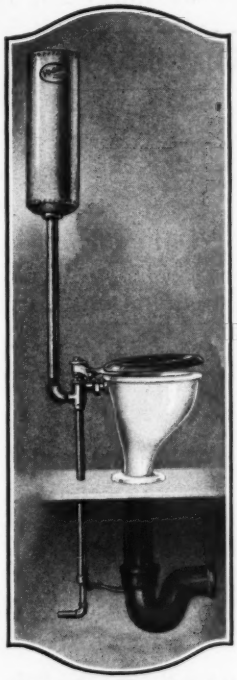
KEWANEE BOILER CORPORATION

division of American Radiator & Standard Sanitary Corporation

KEWANEE, ILLINOIS

Branches in 40 Principal Cities

When a VOGEL is installed . . . the job is done . . .



Number One Vogel Frost-Proof Closet. Simple in operation. Sturdy in construction. Half a million in operation.

Plumbers' Profits is the Twins' Worry

1. In case your are wondering
   And anxious to know
   Here's why the plumber
   Is counting his dough
2. He's through with all things
   Like worries and care
   Because he sells Vogels
   Which *need* no repair
3. For a Vogel closet will never break
   And repairs are a thing
   That you don't have to make
4. The same with the hydrant
   It never goes wrong
   It's built like the closet
   And lasts just as long

So you build up good will
And profits as well
With every Vogel
Product you sell

Vogel Frost-Proof Hydrant

MR. O. O. RHYME, of Belmont, N. C. wrote us recently that he had years of experience installing hundreds of VOGEL Frost-Proof Closets and Hydrants, and that every one was still working satisfactorily. He says "I consider the job done when a Vogel is installed."

There are more than 500,000 VOGEL Frost-Proof Closets in use. Properly installed they cannot freeze, and will give years of service without repairs. A washer may have to be renewed after 10 or 15 years, but that is all.

Send for VOGEL stickers, blotters, and folders for your customers. Folders are imprinted with your name and address. Tell us how many you need. We'll be glad to send them promptly.

JOSEPH A. VOGEL COMPANY
Wilmington, Del. St. Louis, Mo.

See inside back page for VOGEL SELFLUSH advertisement.

VOGEL Frost-Proof Products

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

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WOLVERINE

THE SYMBOL OF DEPENDABILITY

The Wolverine Brass Works have the complete confidence of the Master Plumbers. This confidence is more than a source of justifiable pride. It is an obligation—a responsibility—an inspiration. It makes imperative, their high standard of manufacture, that has become symbolical of Dependability.

WOLVERINE BRASS WORKS

GRAND RAPIDS WB MICHIGAN

We Sell the Retail Plumbing Trade Exclusively

"Domestic Engineering" keeps you posted on the latest developments in the plumbing and heating industry.

Between Ourselves

"The battle of business and commerce is no longer fought with merchandise." — J. Thomas Lyons.

Research might be characterized as the most essentially productive of all man's endeavors; in fact, the greatest boons to civilization have been developed through intensive research; as for example, the apparently simple light bulb, which cost Edison months and years of experimentation with countless materials: vegetable fibres, clays, woods, metals, secured from all parts of the world, from which he evolved the thing that made electric lighting possible: the filament, or the heart of the electric light bulb.

Your Editor

RESEARCH has been and continues to be a factor of cardinal significance in the social, industrial and scientific development of the world; it is not, as many people still feel, a mysterious and mythical procedure beyond their comprehension. It is a thing everyone of us carries on to a certain extent, although we do not always give it that name. This conception of research is brought out clearly by F. C. Houghten in his article, "Progress in Research in the American Society of Heating and Ventilating Engineers Laboratory," and is exemplified by the work carried on by and through this laboratory. A practical subject of interest to the readers of DOMESTIC ENGINEERING is the research in pipe sizes which is also discussed in this article.

AS a study of the technical problems involved in the installation of steam heating systems in submarines, the article in this issue by E. W. Sylvester entitled "The V-5, a Steam-Heated Submarine," will, we are sure, be of keen interest to many, especially in view of the fact that steam heating in submarines is a comparatively recent development. Previously, it was necessary to use electric heaters, which entailed a heavy load on the craft's main batteries.

ONE of the most important features in the Merchandising Section of this issue is the sales story by the Master Salesman. A man who is building a home has received bids on the plumbing installation from several local contractors and has found them somewhat higher than the prices quoted by a mail order house, which has agreed to find someone to do the labor on the job on a separate contract. How an open-minded and progressive local plumbing contractor went to the home builder with a proposition to do the labor on the job without furnishing the fixtures, and then, through a series of psychological moves, lead the prospect into the conviction that the thing to his advantage would be to give the contractor the entire job—these things and the analysis of the situation by the Master Salesman, make this a valuable story for every plumbing and heating contractor.

THE following encouraging letter was received from L. J. Brien, Hart, Mich.—"Attached herewith is my check for $3.00 to cover my subscription to January 1932, for your most excellent magazine which I have enjoyed and derived a great deal of benefit from for many years, and would as soon think of being without as a woodsman would think of going into the woods to chop wood without an ax."

DOMESTIC ENGINEERING as usual was "at the front" securing the first hand facts in the story of the Presidents' and Secretaries' Conference, held January 13, 14 and 15, at the Congress hotel, Chicago, under the auspices of the Plumbing and Heating Industries Bureau. If you like to keep posted on association affairs you will want to read the story of the conference in this issue, and be informed as to what occurred during the three-day meeting.

THE second of the series of articles devoted to heating devices and their uses, "Steam Fittings and Accessories," by Harold L. Alt, appears in the present number of DOMESTIC ENGINEERING, and goes on with the discussion of these small objects that are so important in every plumbing and heating installation. A studious reading of this article will redound to the benefit of every contractor.

IN OUR issue of February 8 will appear a complete story of the thirty-sixth annual meeting of the American Society of Heating and Ventilating Engineers to be held at the Benjamin Franklin hotel in Philadelphia, Pa., during the week of January 27. The International Heating and Ventilating Exposition, to be held at the Commercial Museum in Philadelphia, concurrent with the meeting, will also be reported fully. As this is an annual event of no little importance in our industry you will naturally wish to avail yourselves of "Domestic Engineering's" story of the affair.

The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe

REAL HEAVY DUTY CIRCULATING HEATERS!

When you figure on a job requiring a large amount of hot water available immediately, remember the EverHot Heavy Duty Circulating Heaters.

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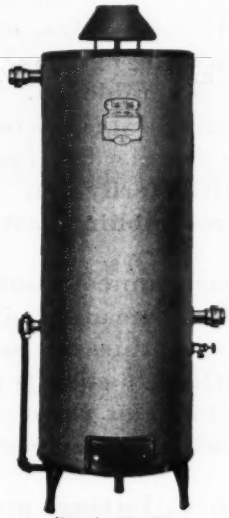

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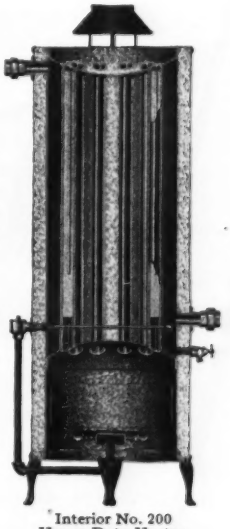
Heavy Duty Heater

They are economical in operation, because:

1. **The Stack Loss is Low.**
2. **The Jacket Loss is Low—a mere fraction of that incurred in a heater of different type, for the EverHot is insulated with rock wool 2 in. thick.**
3. **They have trouble-free, condensation-proof burners.**
4. **These heaters will require infinitely less service than other type heaters—they have no complicated parts.**



Interior No. 200
Heavy Duty Heater

PERTINENT FACTS:

No. 100
100 Gallons of Hot Water Per Hour
Will handle up to 200 gallons additional storage.
Burner Capacity: 70,000 B.T.U. per hour.

No. 200
200 Gallons of Hot Water Per Hour
Will handle up to 400 gallons additional storage.
Burner Capacity: 140,000 B.T.U. per hour.

And they can be used on hot water heating jobs, too.

JUST LOOK AT THESE PRICES!

No. 100	*List Prices:*	No. 200
$225		$295

Get complete information—ask for Folder HD1.

EverHot Heater Company

5211 Wesson Ave. **Detroit, Michigan**

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A thorough anneal more than allows for threading, it permeates the thickest sections of the fitting to effect a malleability that can resist shocks and strains of the severest kind.

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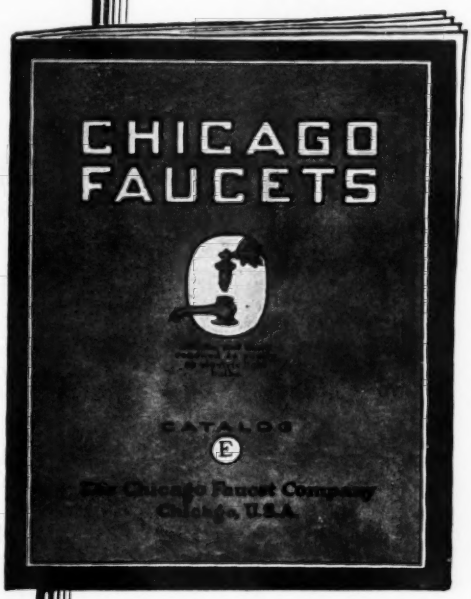

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It's the biggest, most attractive, most complete catalog we've ever published. We have tried to make it more than just a catalog—it's actually a sales help to you in your business.

This new catalog illustrates a wide variety of fixtures, many of which have exclusive features obtainable in no other line. Any plumber or jobber who will take the time to study it will find numerous items that are far superior to anything else on the market. For those who believe in merchandising, here is a golden opportunity for 1930.

We cannot begin to tell you about all the good things that are presented. You can complete the job by mailing this coupon for your free copy—76 pages—printed attractively in orange and black—every page interesting. Get it now—your first step toward making 1930 a more profitable year.

Chock Full of Good Things You Can Sell at A Profit

35 types and styles of Classic Sink Faucets.

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A new Pop-up Bath Waste.

A complete bath fixture with many exclusive features.

The new Manhattan Bath Fixture for 6-inch centers.

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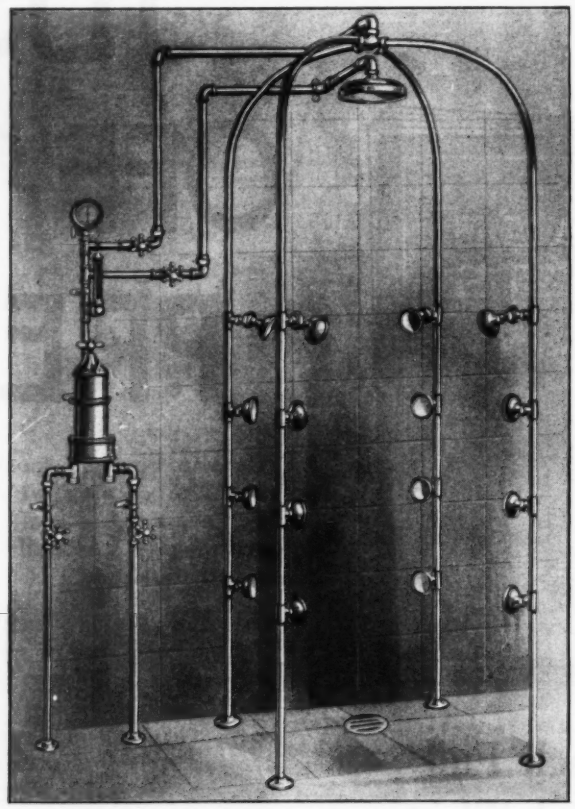

Solid Nickel Silver hydro-therapeutic shower in U. S. Naval Hospital, Mare Island, Calif. Manufactured by THE JOHN DOUGLAS CO., Cincinnati, Ohio. In this installation the tubing is Solid Nickel Silver which matches in lustre, color and finish the beauty of the cast fittings.

SOLID NICKEL SILVER FIXTURES BY DOUGLAS—FOR U. S. NAVAL HOSPITAL

WHERE the service requirements of plumbing fixtures are unusually severe—where fixtures must always be sanitary, clean-looking and attractive during constant daily use—there you will find a need for the properties offered by Solid Nickel Silver plumbing fixtures. The rich, lustrous beauty of Solid Nickel Silver is comparable to that of Pure Nickel and other high Nickel Alloys. It is corrosion-resistant and is therefore easily cleaned. In hardness, toughness and strength Solid Nickel Silver resembles tough bronze. These properties assure wear-resistance to valve seats and render Solid Nickel Silver fixtures difficult to mar or break either during installation or use... Because of their permanent beauty, long life and economy in service, Solid Nickel Silver plumbing fixtures meet the highest architectural standards of quality.

U. S. Naval Hospital, Mare Island, Calif., equipped with Solid Nickel Silver plumbing fixtures by The John Douglas Co., Cincinnati, Ohio.

18% 22 Nickel SILVER

THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

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STEEL HEATING BOILERS

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COAL OR OIL BURNING

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FIRE TUBE BOILERS
COIL WATER HEATERS
COIL HEATING BOILERS

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MONITOR

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Finished in Chrome-plate

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Double life is provided by REVERSIBLE jaws. The ONLY chain pipe vise with this valuable feature.

Increased capacity, too. Each "Vulcan Superior" takes pipe ½ inch larger than others of similar size.

A quality vise—made entirely of tough wrought steel. Rugged in construction—rapid in action—positive in grip—chrome-plated for durable finish. Two sizes for ⅛ to 4½-inch pipe.

J. H. WILLIAMS & CO.
"The Drop-Forging People"
New York BUFFALO Chicago

THE CELEBRATED SKIP TOOTH DIE
(Genuine Nye)
REG. U. S. PAT. OFFICE

A Letter from Harry G. Nye

Jan. 25, 1930.

To the Plumbers and Steamfitters of the U. S. A.

About This Seat Business

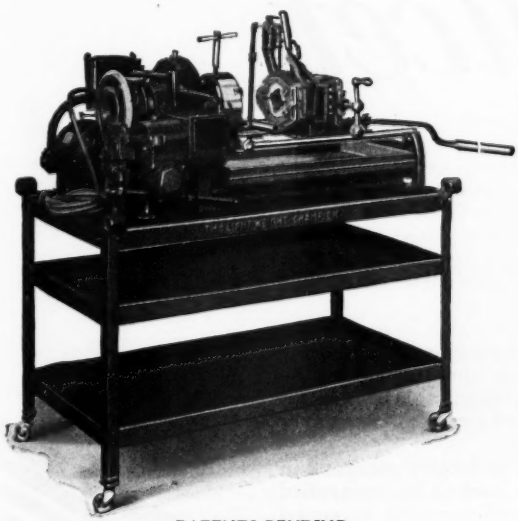
There has been a good deal of argument down at Washington lately as to what a lady should sit on—whether she should sit on the left or sit on the right. Personally I think she should sit on the right until the right gets tired, and then sit on the left if she wants to.

That's her affair, and a personal matter, and I don't see why anybody should drag in precedents, or presidents, or anybody else, or thing else, whatever. If it's her seat she should stand up for it, or sit down for it, or whatever she thinks will be most comfortable.

It seems to me that the government has other more important matters to settle right now than whether some lady should sit on some gentleman's right hand or on his left hand. If the gentleman doesn't mind, I don't see why she shouldn't if she wants to.

My sympathy is all with the lady, whose seat has been discussed a great deal more than is necessary, or nice. I was taught in school that Washington was a seat of government, but now Washington seems to be a government of seat.

But what the people of this country are really interested in isn't the seat of government but the head. That is the part of the government that ought to be busy, but it won't be if its mind is on something else somewhere else.



Whether the seat is right or left, or up or down, doesn't make any difference to the plumbers and steamfitters or electricians of this broad land of ours. What they want to know is who's going to build, and will they want a bath room and a heating plant, or get along like grandpa did.

They aren't interested in the seats of the mighty, or where they put 'em. What they want is a chance to sit down once in a while themselves. You can do it if you use Nye Tools, they do the same work so much faster and easier. The fellow who owns a good set of Nye Tools is sitting pretty.

Faithfully yours,

Harry G. Nye

PATENTS PENDING

THE LIGHTWEIGHT CHAMPION

Threads—Cuts Off and Reams

Capacity ½ to 2 Inches

OTHERWISE KNOWN AS

THE NYE TOOL & MACHINE WORKS

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(Genuine Nye)
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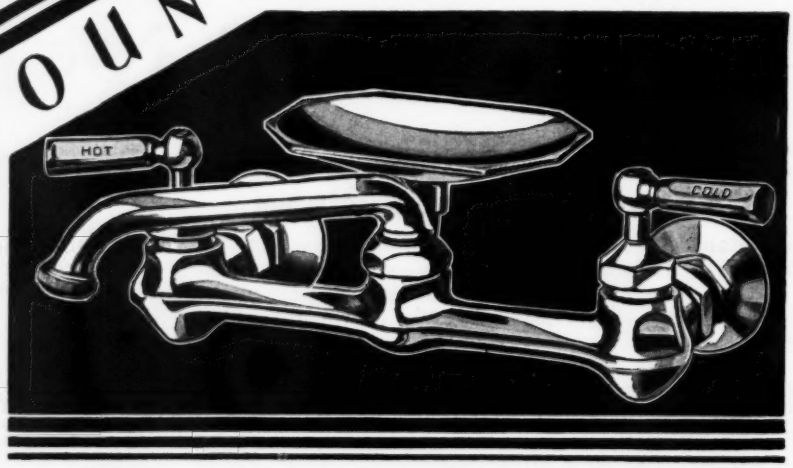

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The BOHN-ART faucet

Here is the best looking and most finely made sink fixture that money can buy.

Of red brass with from 79 to 82% copper content, and chromium plated, giving it a lasting finish without attention, only the best of materials obtainable enter into its construction.

With the great interest that is now being centered by the housewife upon improving the appearance and enhancing the utility of her kitchen, this Bohn-Art faucet should prove a real money-maker for the alert dealer.

Product of one of the largest concerns in the industry, it is backed by unexcelled manufacturing facilities and financial resources. Write us for price quotation.

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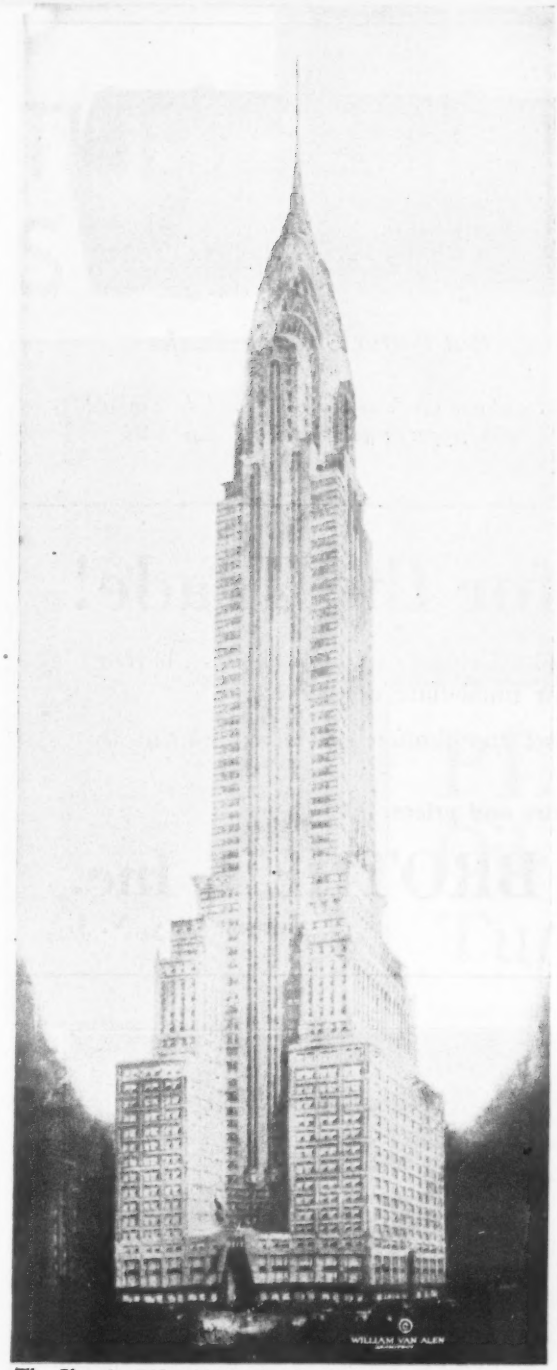
CAPITOL BRASS DIVISION
MANUFACTURERS OF BRASS VALVES, BOILER TRIMMINGS AND PLUMBERS' BRASS GOODS
DETROIT~MICHIGAN



The Chrysler Bldg., N. Y., piped with Youngstown steel pipe.
Architect—**WILLIAM VAN ALLEN** *Builder*—**FRED T. LEY CO.**
Mechanical Engineer **LOUIS T. M. RALSTON** *Heating Contractor* **BAKER, SMITH & CO.**

When Youngstown Pipe goes in, YOU CAN FORGET IT

ANY BUILDING that is piped with Youngstown steel pipe—in plumbing, heating, sprinkler or refrigeration systems—is piped for a lifetime of trouble-free pipe performance.

Every length of this pipe comes to you pressure-tested—strong, ductile, sound of weld, cleanly threaded, free from flaws and absolutely uniform. It is a pipe that resists corrosion and will give a lifetime of service without attention. Youngstown steel pipe is truly the soundest insurance of pipe permanence—easy to install and costing no more than ordinary pipe.

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One of the oldest manufacturers of copper steel, under the well-known and established trade name "Copperoid"

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DENVER—Continental Oil Bldg.
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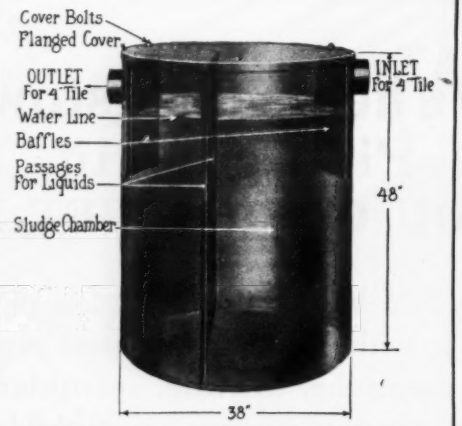
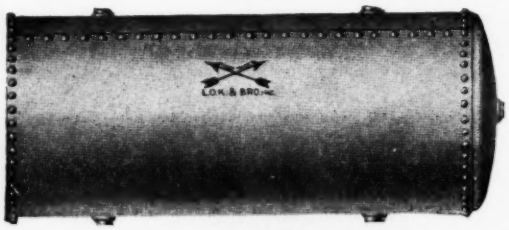
YOUNGSTOWN

GALVANIZED SHEETS PROTECT ▼ ▼ ▼ ▼ SAVE WITH STEEL



Horizontal or Vertical Septic Tanks



Hot Water Storage Tanks

Riveted and caulk welded, or all welded. Available with copper or galvanized iron pipe coils.

Manufacturers for the Trade!

KOVEN stocks a *complete line* of standard sinks, expansion boilers, barber boilers, closet tanks, coil boilers, etc., for immediate delivery.

KOVEN also manufactures *to your exact specification* special equipment to meet individual requirements.

Write for literature and prices.

L. O. KOVEN & BROTHER, Inc.

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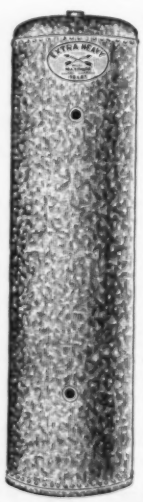
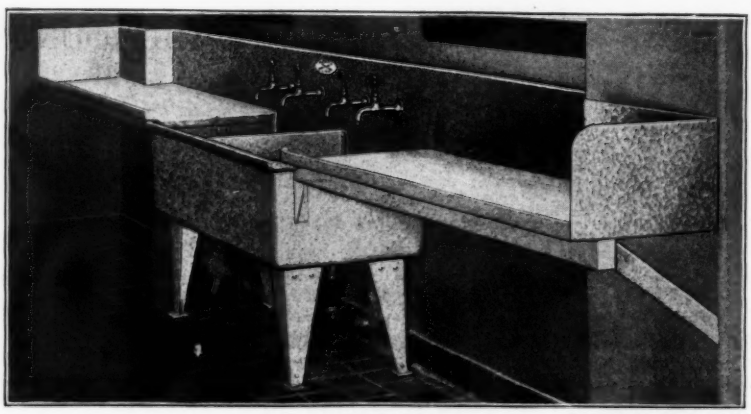


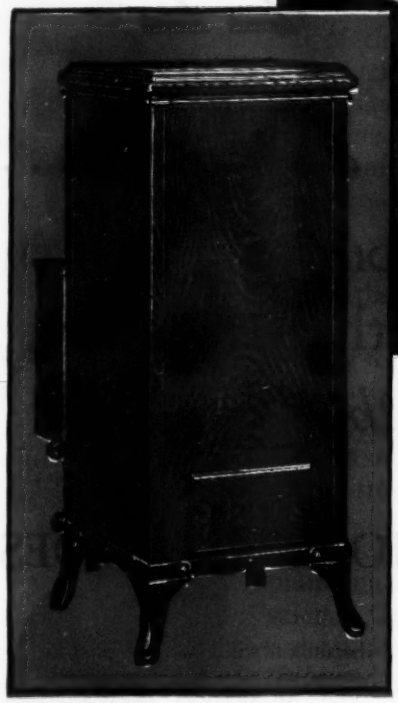
Range Boilers



Sinks—in Standard Sizes, or to Specification

of galvanized iron, Monel, Allegheny, and other alloys for large installations, such as hotels, hospitals, cafeterias, etc.

THEY SELL



Piatt Furblo Positive Air Agitation Means Greater Increased Furnace Efficiency and Means Air Circulation. No Cold Spots. Warm Air, Carried All Over the House.

PIATT Oil-Burning Appliances Turn Profits *your* way

Attract new customers! Speed Sales! Build steady year 'round profitable business with this fast selling line of attractive, economical Piatt Oil-Burning Appliances.

Everyone wants and everyone can *have* the convenience and economy of oil; with the Piatt Cabinet Heater; the Piatt Modern Range in colors; or the Piatt Furnace with Furblo positive warm air circulation in winter and cool air in summer.

Freedom from drudgery . . . from dirt . . . from constant attention is assured by these sensational sellers.

They bring profits all seasons of the year. Each appliance is especially designed around the Piatt Oil-Burner which burns without wicks, weights or springs . . . has no fragile parts, and requires no pressures or vacuum to give intense heat on very little fuel — ordinary furnace oil . . . almost looks after itself.

Step into the big sales class! Get the Piatt line and then watch profits mount! Get mechanical details and trade-building plan by sending the coupon.

MOTOR WHEEL CORPORATION
Heater Division, LANSING, MICHIGAN

BURN OIL
SAVE TOIL

PIATT OIL BURNING APPLIANCES
HEATER DIVISION • • MOTOR WHEEL CORPORATION

Motor Wheel Corporation, Heater Division, LANSING, MICHIGAN

Send me at once, full information and profit-building plan on the Piatt Appliances. I am not obligating myself but will study the details carefully.

Name _____
(Please print or typewrite)

Street _____

City _____ *State* _____

My Business _____

22 *empty apartments . . .*

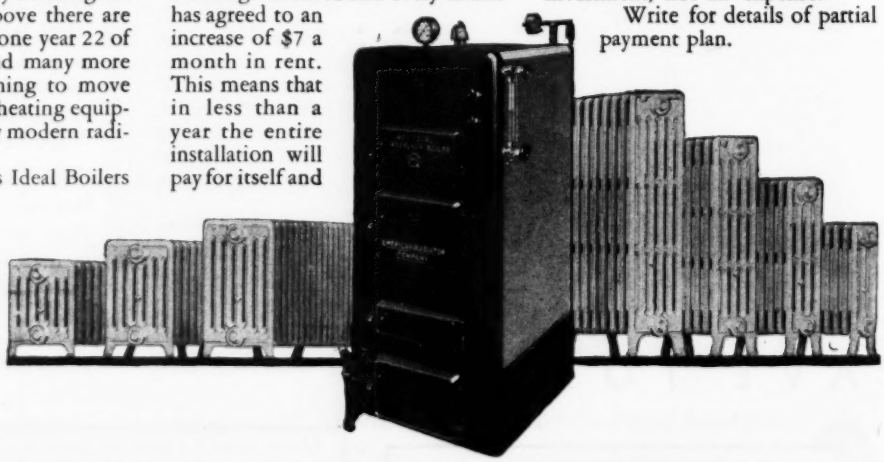
AMERICAN RADIATOR WARMTH rented them all *and gave the landlord* $735 A MONTH BESIDES

HERE is a true story that tells why American Radiator warmth is one of the greatest sales influences that you can add to any building. In the two buildings above there are 105 apartments. For one year 22 of them were vacant and many more tenants were threatening to move unless old-fashioned heating equipment was replaced by modern radiator warmth.

In both apartments Ideal Boilers and American Corto Radiation were installed at a total cost of $16,000. Today every apartment in both buildings is rented and every tenant has agreed to an increase of $7 a month in rent. This means that in less than a year the entire installation will pay for itself and the landlord will continue to get an increased income of $735 every month.

An "All-American" job is a real investment, not an expense.

Write for details of partial payment plan.



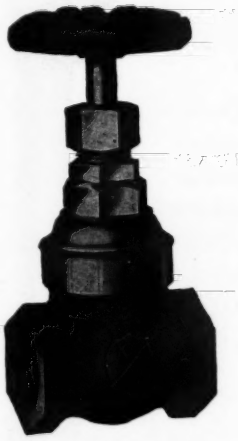
AMERICAN RADIATOR COMPANY

40 WEST 40TH STREET, NEW YORK

Division of

AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

What plumbers say about KENNEDY Valves and Pipe Fittings



Kennedy Standard Bronze Gate Valve. The Kennedy line also includes Globe, Angle and Check Valves for all purposes in a wide range of sizes.

Kennedy Malleable Iron Elbow. The Kennedy line of fittings includes both bronze and malleable iron pipe fittings.

THE comments on Kennedy Valves and Fittings quoted in the adjoining column are typical of the many hundreds in our files received from every section of the country. These comments have been sent to us by plumbing and heating contractors who have tested Kennedy Products, compared them with others, and know their many good features from years of experience.

These contractors and thousands of others have found that it pays to standardize on Kennedy Products and use them on all their work. Once you try Kennedy Valves and Fittings, repeat orders will automatically follow, as pipe fitters report how Kennedys speed-up pipe fitting work and help to make creditable, profitable and permanently trouble-free jobs.

Kennedy Valves and Fittings are sold to the plumbing and heating industry through the wholesalers. Get in touch with your supply house and order a supply for your next job. You will quickly learn why so many contractors have found Kennedy Products thoroughly satisfactory.

"Kennedy Fittings and Valves are perfectly satisfactory. I highly recommend them to other plumbers."

"I install nothing but Kennedy Valves, as I find them the best."

"Kennedy Fittings help us to do better work with less effort."

"I find Kennedy Fittings to be the best that can be gotten and always use them in all our work."

"I have used Kennedy Valves for 35 years and have had best service."

"Both in finish and threads we find Kennedy Fittings the best we ever looked into, say our employees. We agree with them."

"We have used Kennedy Fittings for some time and they have proved quite satisfactory. The tapping runs true both as to size and direction. They are light, yet strong, and stand more tightening than any other fittings we have ever tried."

"Have been using Kennedy Valves and Fittings for years, as they are always reliable and stay tight."

"I always insist on Kennedy Fittings as I find them perfect and easy to enter or connect with good tapping. Their machine work is all that can be desired."

THE KENNEDY VALVE MFG. CO., Elmira, N. Y.

WAREHOUSES:

NEW YORK CITY: 128-132 White St. CHICAGO: 1335-1337 S. Clinton St.
SAN FRANCISCO: 448-450 Tenth St.

SALES OFFICES:

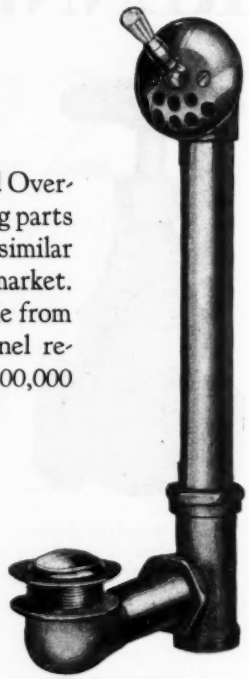
New York Philadelphia Cleveland Atlanta Chicago
Salt Lake City El Paso Seattle Los Angeles San Francisco

KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

Leaders in style, quality and price

DESPITE the demand for lower priced brass goods, the Milwaukee Flush Valve Company has not found it necessary to supplement their standard products with a "Junior" line. On the contrary, manufacturing costs have been lowered by the adoption of simplified designs and the installation of additional automatic machinery. Milwaukee Flush Valve Company's prices are always attractive and the quality of its products is constantly being improved.

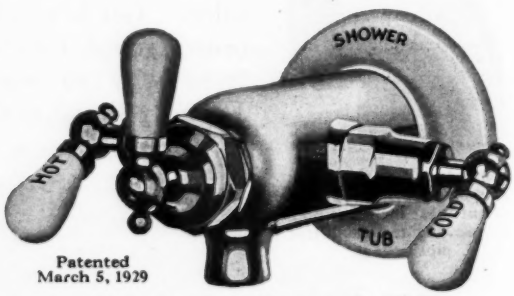


Badger Waste and Overflow. Less working parts than any other similar waste on the market. All parts accessible from the front—no panel required. Over 200,000 in active use.

Patented Sept. 21, 1926

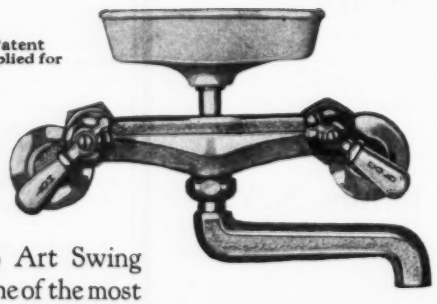
Patent Applied for

The Superior is the most economical Shower Head manufactured. Saves half the water. No holes to clog—adjustable spray—cleanable in thirty seconds. Made in forty-seven styles to meet every requirement. Some styles as low as..... **55c**



Patented March 5, 1929

The Badger Tub and Shower fixture is one of the simplest diverter valves on the market. All controls accessible and renewable without going into wall. Costs less to install and is amazingly low priced.



Patent Applied for

The Duo Art Swing Spout is one of the most attractive looking faucets offered. The plumber can now be supplied with this Milchrome plated art fixture at the attractive price of **$5.25**

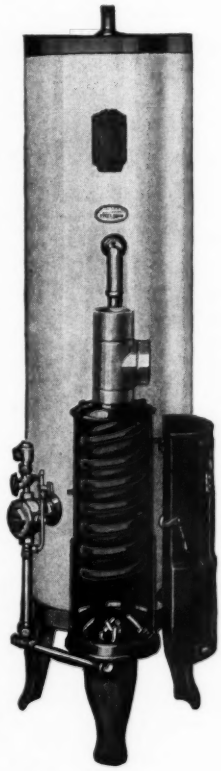
MILWAUKEE FLUSH VALVE CO.

Dept. D-125 MILWAUKEE, WIS.

Three Guarantees

that you get—and can give your customers—

with Side Arm Type Heaters



No. 20SA

List Price $66 Complete

YOU get these One . . . Two . . . THREE positive guarantees with Side Arm Type heaters. *But with no other type!*

And you give these THREE positive guarantees to your customers with Side Arm Type Heaters. *But ONLY with that type!*

These guarantees are integrally embodied in the design itself. Conceived and made a unified part of the heater by the designer. Inbuilt—and nothing arbitrary can make them inoperative. They're definitely engineered into the very principle of the heater.

You know them, and why they assure your business growth.

For brief enumeration to your customers, here they are:

GUARANTEE of LONG-LIFE TANK SERVICE because there is no punishing flame or gas in direct contact with tank.

GUARANTEE of QUICK HOT WATER FOR YEARS because water passes through coils in direct contact with intense flame.

GUARANTEE of CLEAN WATER because water to be heated is drawn off tank from *above* the sediment line.

These basic, inbuilt guarantees assure greater customer satisfaction—the only permanently profitable item any merchant can sell.

In the Hotstream Heater you will find these basic guarantees of satisfaction surrounded by many exclusive modern features that help make even these sales easier. Write today for the details that get you started on these profits.

THE HOTSTREAM HEATER COMPANY

"Makers of Heaters that Heat" CLEVELAND, OHIO

HOTSTREAM

AUTOMATIC STORAGE

HEATERS

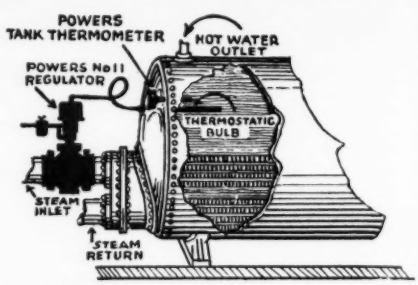
TANK REGULATORS

THE PENOBSCOT BUILDING, DETROIT

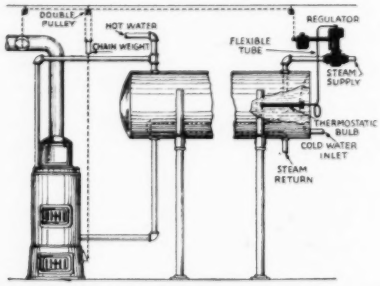
Architects and Engineers: **Smith, Hinchman & Grylls**
Donaldson & Meir

Plumbing Contractor: **Harrigan & Reid**

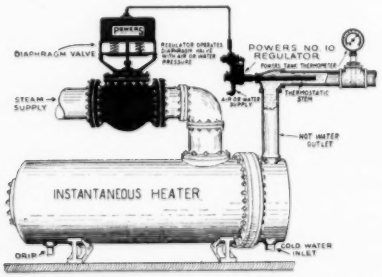
Another prominent building in which Powers Regulators were installed to control the hot water heaters. Long life—Dependable control—Prompt and intelligent service by engineers in 38 cities—are the chief reasons for the popularity of Powers products.



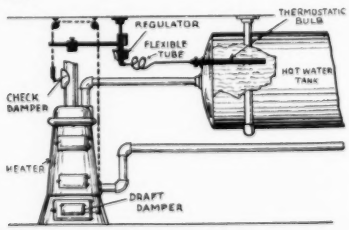
The Powers No. 11 Regulator applied to steam heated hot water tank. Self operating—accurate and durable. *Write for Bulletin No. 2035.*



The Powers No. 12 Regulator for controlling steam coil and auxiliary heater. *Write for Bulletin No. 2035.*



The Powers No. 10 Regulator operated by either compressed air or water pressure for control of large valves, swimming pool heaters, etc. *Write for Bulletin No. 2035.*



The Powers No. 13 Regulator for hot water tank heaters and garbage burners. *Write for Bulletin No. 2035.*

THE POWERS REGULATOR COMPANY

35 years of specialization in temperature control

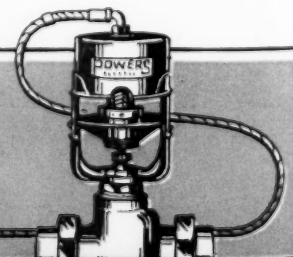
General Eastern Office
137 East 46th St., New York City

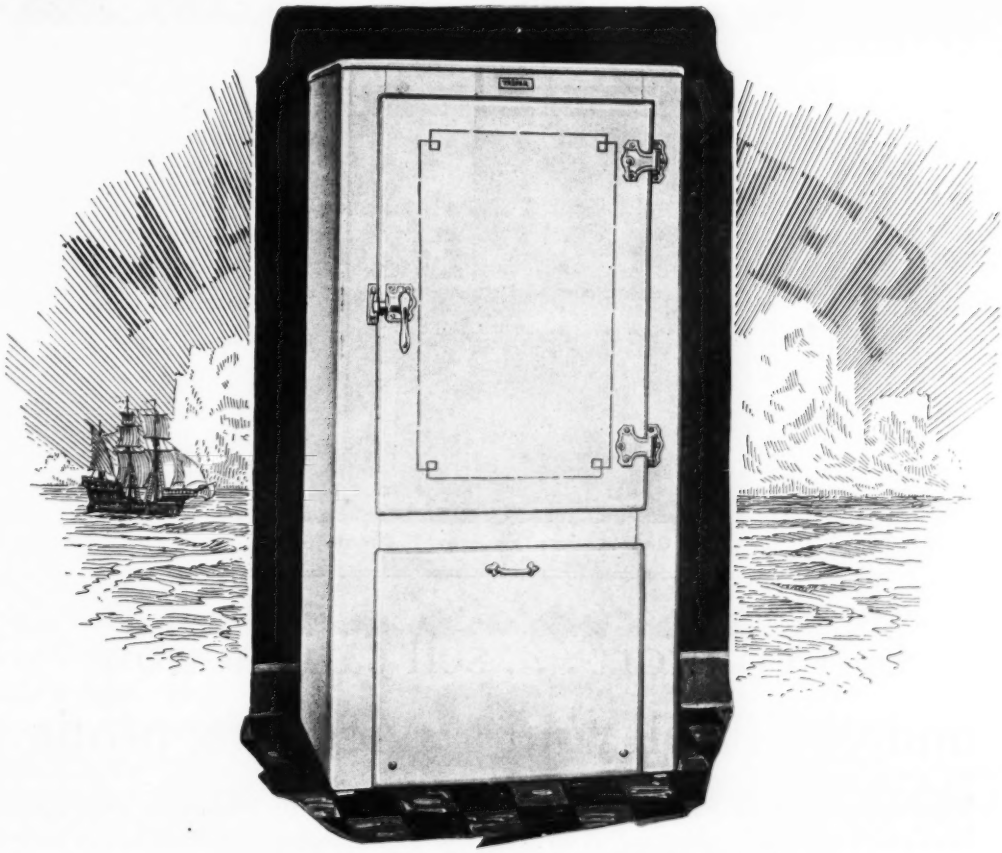
General Offices and Factory
2720 Greenview Ave., Chicago, Ill.

Canadian Powers Regulator Co., Ltd.
106 Lombard St., Toronto, Ont.

Offices in 35 other cities — See your telephone directory

POWERS





A CLEAN CUT 4 SQUARE ANSWER

TO THE MAN WHO feared that refrigeration was something strange—something to learn—who did not feel able to install or service it—who wanted a line of refrigeration visibly better than competition—who wanted something attractively priced—

To that man the Trupar MAYFLOWER Model is a clean-cut, four-square answer.

The Trupar MAYFLOWER Model is self contained. The mechanical unit is installed and tested at the factory. No installing. Ready to operate as soon as plugged in.

Mayflower Towers Above Competition

It is larger and has greater capacity and heavier insulation (3 in.). It is trimly proportioned, has heavy satin silver hardware and critics admit that it is much better looking.

Not only does the MAYFLOWER exceed in size and quality but it is also low in price. As a matter of fact this model is built with the ever conscious knowledge that to make it the choice of your customers it must be definitely superior—and it actually is superior.

Armed with advantages so obvious, there can be little question of the sale when your prospects make deliberate, point by point comparisons prior to purchase.

You need the extra profits Refrigeration can bring you this year—write NOW for prices and discounts.

TRUPAR

"Performance as Promised"

TRUPAR MANUFACTURING CO.

140 DAVIS AVE. DAYTON, OHIO

MAIL THIS COUPON

TRUPAR MANUFACTURING CO.

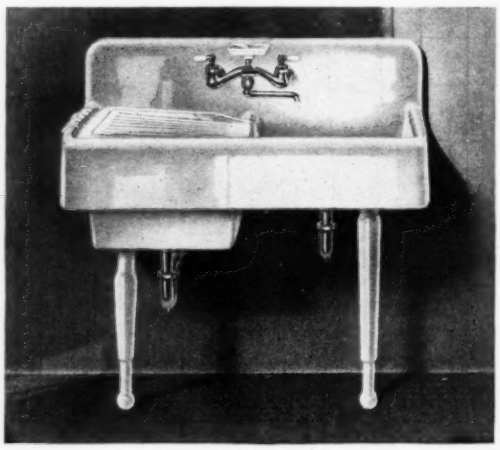
Send us full particulars regarding your MAYFLOWER Model.

Name.....

St. and No......

City & State.....

1855 · SEVENTY-FIFTH ANNIVERSARY · 1930



Crane combination sink and laundry tray, C 21110

Sell comfort . . . sell satisfaction and you'll sell your services at a profit

Take a larger view of yourself and your business. You're performing a vital service for your community. Actually you're selling it health, comfort, and the means to higher living standards.

The minute you assume this attitude in making a sale, you appeal to the common sense of your prospect, not to his bargaining sense.

Stress the special advantages of each fixture. This combination sink and laundry tray, for example, gives service of real merit. It will mean something to your prospect if you show him how installed in his kitchen it will save unnumbered steps. How it will stop those continual trips to the basement tubs. How it removes the risk that threatens dainty fabrics when they are sent to the laundry, and at the same time excuses the lavatory from serving as wash-tubs for them.

Then as the laundry compartment is covered with a removable drainboard, this fixture has every advantage of the most modern sink.

It is such a fixture as this that encourages people to revamp their plumbing systems. Display it; push it; it will build goodwill as well as sales.

Valves CRANE *Fittings*

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVENUE, CHICAGO
NEW YORK OFFICE: 23 WEST 44TH STREET
Branches and Sales Offices in One Hundred and Ninety Cities

POSITIVE uniformity of metal content and of threading accuracy are assured in Mueller Brass Pipe Fittings through the Mueller process of manufacture. There can be no more difference between any two Mueller brass fittings, regardless of when they are made, than there is between two silver dollars.

They will screw up water-tight and permanent regardless of the conditions under which they are installed. They are free from sand holes or flaws of any kind. They have clean cut, whole threads of standard gauge and size that make them easy to work with.

From your jobber.

Send for Mueller Pipe and Fittings Catalogue

Mueller Brass Co.
PORT HURON - MICHIGAN
THREE GENERATIONS OF BRASS MAKING

BUYING brass goods was once pretty largely a matter of guesswork. The fact that the general appearance of brass goods was pretty much the same led to confusion. It wasn't until after it was installed that the difference was detected.

American

"The old days are gone." That's as true of brass goods as it is of anything else. The old inevitable "survival of the fittest" is working out in this as in all other things.

American Sanitary Mfg. Co. started out to manufacture a line of brass goods that would meet every demand for least costly installation, continuous, trouble-free service and reasonable price.

Cheap brass goods houses have come and gone and others will come and go while American's strict adherence to its first policy of quality at reasonable price continues to send its products farther and farther toward the front.

American is the name of the brass goods made for the future as well as the present. Insist upon it for your work.

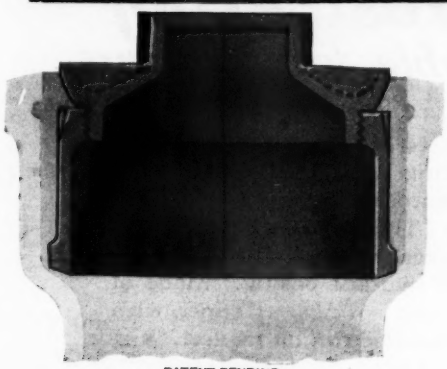
Your jobber can supply you

AMERICAN SANITARY MFG. COMPANY

Abingdon :: Illinois

SUPREMO
THE CAST IRON CLEANOUT PLUG
with
THE LEAD SEAT

THE "Supremo" Cleanout Plug is easy to install and once in place will save many times its first cost in time and trouble. It is made of Udylited (rust proof) cast iron. Consequently, there is no electrolytic action to form a nature weld and hinder removal of the plug at Any Time.



PATENT PENDING
Cross Section View of "Supremo" Plug

TAPERED CONTACT

The way the "Supremo" is built —with tapered contact between the hub and the plug—makes not only a ground joint that is tight all the time but also assures the easy removal of the plug at ALL times.

The "Supremo" is the only cleanout plug which positively will not leak under any method of test which might be used. Let us prove this to you.

Write us for complete details or ask your jobber to supply you.

SANI-TEED
PLUMBING PRODUCTS
MADE FROM VIRGIN METAL

J. A. ZURN MFG. CO.
ERIE, PENNA.

Sales Offices in the following Cities:

Boston New York Philadelphia
Pittsburgh Toledo Chattanooga
Chicago Minneapolis Denver
Dallas Los Angeles
Seattle San Juan, Porto Rico

profits MOUNT ---- *when servicing* STOPS

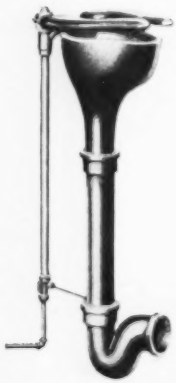
Excessive running back and forth with a kit to repair minor faults is not *big-money* plumbing. No plumber ever achieved his rightful place in the trade as a "service man" only. It is the sale of reliable fixtures that require little or no attention that pushes your profit to a peak . . .

The mission of the Haas Frost Proof Closet is to end service calls. To make profits mount is its sworn duty. If you've already handled Haas Frost Proofs, you know. If you haven't—here's the information.

HAAS *Frost-Proof*
The Old Reliable for 25 Years

Haas Frost Proof Closets are the only ones that can prevent sewage backing into fresh water lines. The patented inlet valve automatically removes every danger of contamination This valve is as simple as it is efficient. Easily taken apart. The complete operating rod lifts out of hydrant casing. Made of brass, with phosphor bronze springs. Hopper with flush rim cast solid, or *enameled rim on request.*

These Haas features are safety factors and trouble preventors. Backed by a quarter of a century of Haas success, Haas Frost Proofs offer the plumber a line that means profit on the sale and no loss thereafter on useless servicing. Ask your jobber about Haas Frost Proofs and Haas Flush Valves.

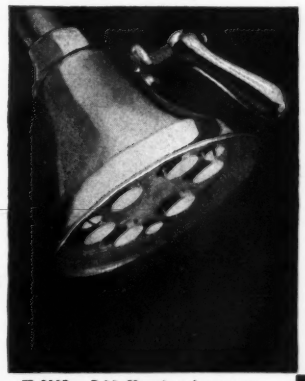


Model at top flushes when seat is released.

Model at bottom flushes continuously when seat is depressed.

THE PHILIP HAAS CO., Inc., Dayton, Ohio

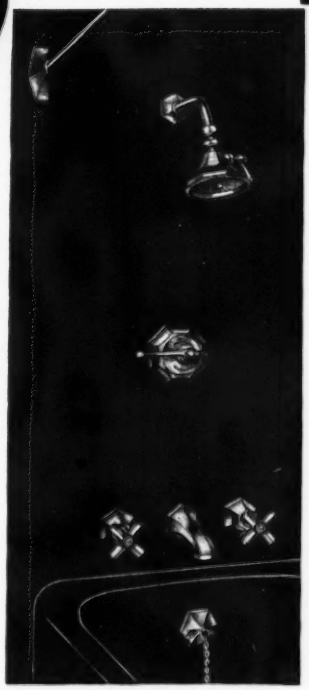
Haas



K-3395—*Self-Cleaning Anystream Shower Head*

This is the remarkable new head that is so widely talked of. Adjustable to any kind of stream desired. A turn of the lever flushes out every trace of dirt. With half-inch female I. P. inlet. Finished in tarnish-proof chromium plate.

K-5502-M—*The Diamond Sink Fixture,* in Speakman chromium plate, beautifully designed, reasonably priced. Half-inch male connections. Adjustable threaded flanges. Center of inlets eight inches. Removable metal soap dish and elevated swinging nozzle.



K-4017—*The Speakman Artline Group.* The design, finish and workmanship of these fixtures make them suitable for the most distinguished bathrooms. No polishing is required. Their sparkling chromium plate finish is permanently tarnish-proof. A kitchen sink fixture in the same beautiful Artline design is also available.

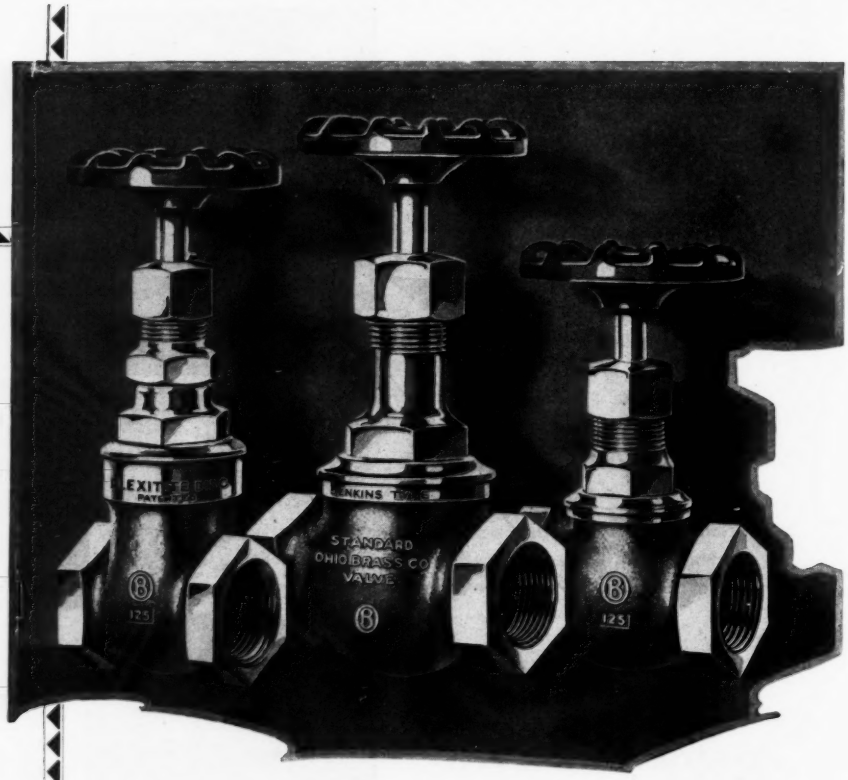
3 outstanding Speakman specialties

Every one of these Speakman fixtures is supreme in its field. Every one offers unequalled style, beauty and convenience superiorities. Every one is made with the precise accuracy, the guarantee of unusual long life that mark the products of Speakman plant.

Speakman has gained its reputation in the plumbing field by only one means—*making better fixtures.* Speakman Company, Wilmington, Delaware.

SPEAKMAN

Showers and Fixtures



"There's an Extra Profit in the Make-Up"

Above are shown three types of Ohio Brass Valves. The Flexitite Disc Valve is a gate valve which really shuts off tight and is available for pressures up to 150 lbs. in sizes up to 3 inches.

The Composition Disc Globe Valves (Jenkins type) range in size from ¼ in. to 3 in. and are for pressures up to 150 lbs.

The Brass Disc Globe Valves are for working pressures up to 125 lbs. and range in size from ¼ in. to 3 in.

Your wholesaler will gladly show you the complete line of O-B Valves and explain the "profit in the make-up" features.

Who Gets the Reward?

THE largest rewards in the business of contracting come to that contractor who can best solve the most difficult part of the job. The most difficult problem of the plumbing contractor is not that of buying the best merchandise at the lowest price and selling it at the highest; it is not maintaining the best show-room in town, nor does it consist of being the best merchandiser in the neighborhood, although all of these things help and are most desirable.

The best contractor is the man who can organize his business, his jobs and his men so that they can complete a given contract in the minimum number of labor-hours. The truly successful contractor ever keeps his eye upon this human-labor factor and bends all energies toward keeping it at a minimum.

He even buys his merchandise, not on price alone, but with ever a thought on "how does the installation cost compare with that of some competing article"?

One reason why Ohio Brass valves are very popular with successful plumbing and heating contractors is that they are designed and manufactured to reduce installation labor-time; they pay "an extra profit in the make-up".

Ohio Brass Company
Mansfield, Ohio
1181V

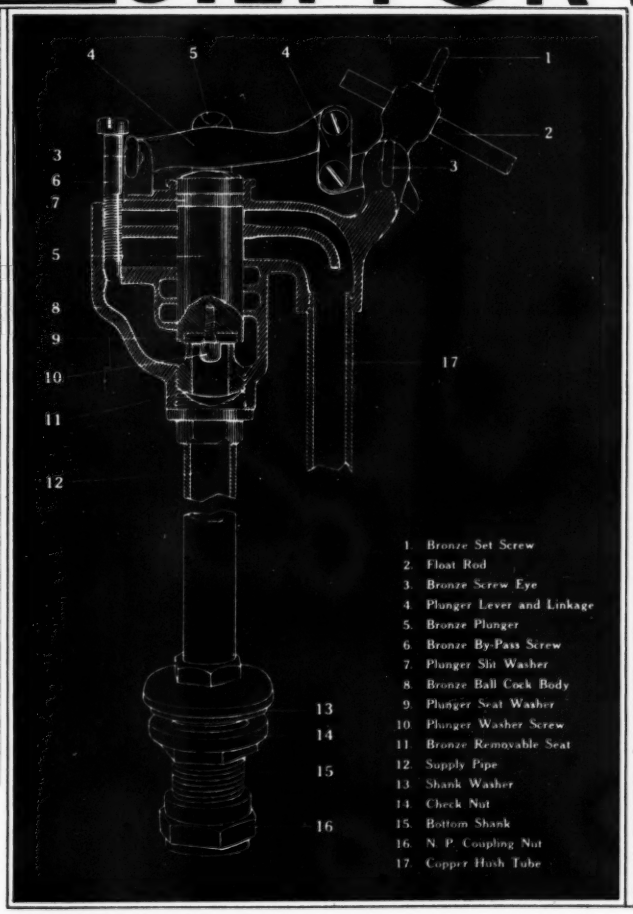
Ohio Brass Co.

NEW YORK PITTSBURGH PHILADELPHIA CHICAGO
ATLANTA BOSTON CLEVELAND ST. LOUIS
WM. P. HORN CO: LOS ANGELES SAN FRANCISCO SEATTLE

PORCELAIN INSULATORS
LINE MATERIALS
RAIL BONDS
CAR EQUIPMENT
MINING MATERIALS
VALVES

QUIET and ENDURING

BUILT FOR LIFETIME SERVICE



This is no idle statement—no manufacturer's boast to gain new customers—no enthusiastic copy-writer's dream. It is a fact. Curtin tank fittings—those quiet operating valves and ballcocks—are built with care and precision, from the finest materials obtainable. Not "how much production," but "how well produced" is the Curtin motto.

See Domestic Engineering Catalog
for full specifications

A. F. CURTIN VALVE COMPANY

Medford - - - Massachusetts

install CURTIN TANK NOISELESS FITTINGS

SIMPLIFIED ACTION

A further reason for lasting, *attention-free* service from the SMITH & WESSON Flush Valve

The operation cycle may be readily understood from the illustrations, which show the valve open and closed. The valve is opened by depressing the handle. The volume of water is controlled by the hydraulic governor which also controls the closing of the valve. With *any* adjustment, the valve is fully opened.

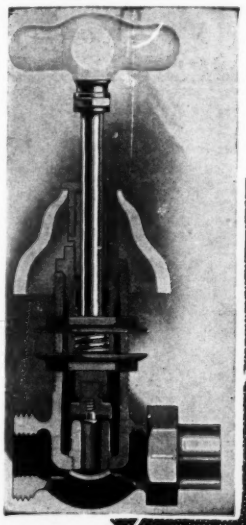
The closing action is aided by gravity and is not dependent on the water flow. In fact, the valve will complete its operation cycle without water, excellent proof of its good design.

For Further Information Write

SMITH & WESSON

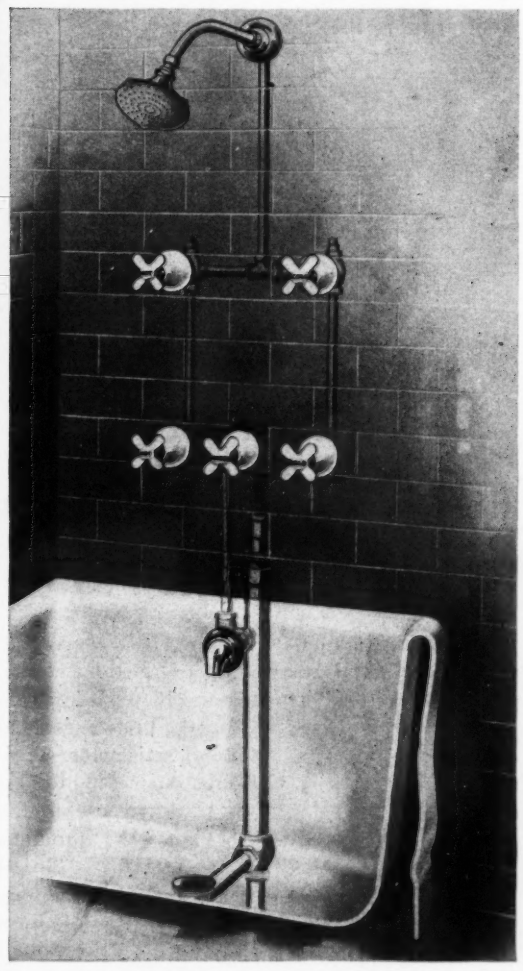
FLUSH VALVE DIVISION

SPRINGFIELD, MASSACHUSETTS



St. Regis

Concealed Bath Fixture Complete With Shower



This extra heavy *Red Pressure Metal Valve* with Removable Seat is used on all *Wiseco Concealed Fixtures*. There is nothing better made.

China Shower Head can be furnished if desired.

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J. B. WISE, Inc.
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Another Way Kohler Helps Plumbers Make More Money

Kohler Lavatory Fittings in the Dynamic Style. Plated with durable, easily cleaned Kohler Chromium Plate

"It's *real* RED BRASS— That's what you want"

When you have at the tip of your tongue all the talking points that honestly belong to a product you certainly do a better selling job. And when you do that, *you make more money.* The competitor whose only argument is price can't meet your quality talk.

Take Kohler brass, for instance. Kohler brass is *real red brass,* made up of a very high percentage of virgin copper. It is not loaded with zinc and other cheaper metals.

Kohler brass is remarkably free from pin holes. The castings are cleaner, and passageways free from obstructions. It machines better, takes a cleaner thread, makes a tighter joint, and enables you to make a quicker, better-looking and better-lasting job.

Kohler brass is designed and built to give a full lifetime of satisfactory service. It matches the quality of Kohler enameled plumbing fixtures and Kohler vitreous china, so well and favorably known as products of unusual excellence.

New 72-Page Book in Color to give to your best prospects
Shows bathrooms, kitchens, laundries, color schemes, suggested retail prices. Send for a supply.

This is just one instance of what Kohler quality can mean to a plumber. Tie up with a line that gives you highest quality *plus* exclusive convenience features—*and you'll make more money.*

KOHLER CO., *Founded 1873,* Kohler, Wis. · *Shipping Point,* Sheboygan, Wis. · *Branches in Principal Cities*

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PLUMBING FIXTURES

LOOK FOR THE KOHLER TRADE MARK ON EACH FIXTURE

Every Shop Should Have These "Van Dorn"

PORTABLE ELECTRIC TOOLS

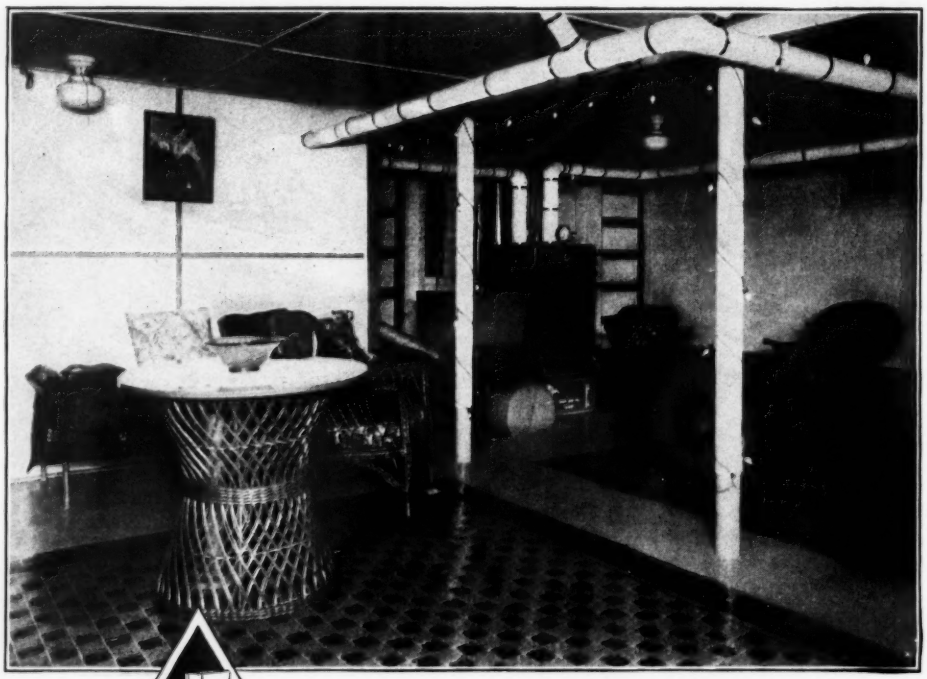
In every shop - automotive, electrical, plumbing, sheet metal or millwright - there are jobs which require these four Van Dorn Electric Tools, the total cost of which is only $123. Every shop, no matter how small, can afford to include them in it's equipment.

COST OF THESE TOOLS

¼" Light Duty Electric Drill	*$25.*
½" Electric Drill	*$45.*
Bench Drill Stand	*$18.*
6" Bench Grinder	*$35.*
Total	*$123.*

The Van Dorn Electric Tool Co., Cleveland, Ohio.

Modern Automatic Home Heat



AUTOMATIC ANTHRACITE HEAT

The Modern "Cellar" with The Electric Furnace-Man

Automatic Home Heat is now obtainable without sacrifice of safety, cleanliness or even economy.

Here, at last, is a proven device which may readily be installed in your present heating plant—warm air, steam, hot water or vapor.

Even temperature, no matter how quickly the weather changes. Not on full blast one minute and off the next, but continuous heat in exact proportion to requirements.

Dependable at all times without danger from fire—without smell, smudge or smoke.

Uses the one safe, reliable fuel—Anthracite — now modernized and made automatic. Ideal for hot water supply.

OVER TEN THOUSAND HOMES ATTEST TO THE PERFECTION OF

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PATENTED AUTOMATIC COAL BURNER

APPROVED BY ANTHRACITE OPERATORS CONFERENCE—A BILLION DOLLAR INDUSTRY

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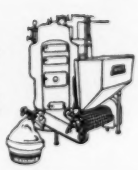

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to

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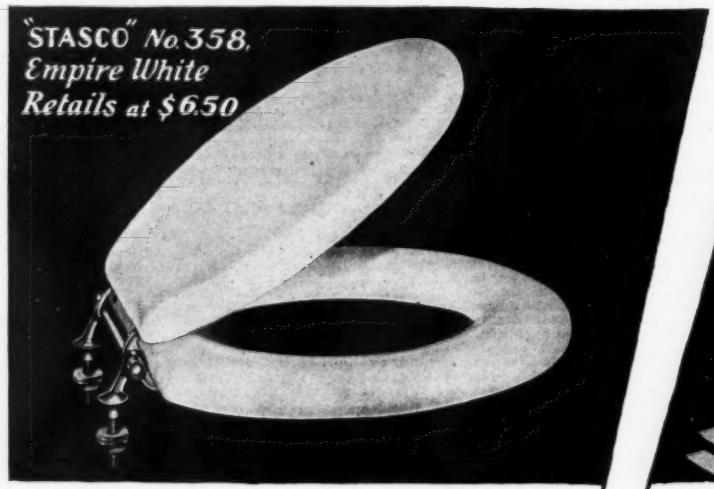
A DEPENDABLE Seamless SPRAYED SEAT



"STASCO" Empire White Seats are seamless, with a *sealed surface* all around. The white Pyralin is a continuous covering without a joint or lap.

A "STASCO" seat may be washed daily—as every toilet seat should be. Water cannot penetrate the Pyralin coating at any point. Frequent washing will not mar the sparkling whiteness of a "STASCO" seat or impair its long life.

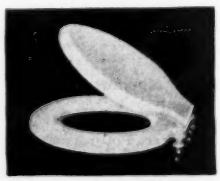
"STASCO" Empire White Seamless seats are made of a clear, close-grained birch or maple core, machine sanded, and covered with a heavy coating of sheet Pyralin—sprayed on by our own exclusive method. For twenty years they have given full satisfaction to millions of users, protecting plumbers against complaints and loss of profit.

Write us for complete information on the "STASCO" line.

STANDARD TANK & SEAT CO. Camden, N.J.

"STASCO" No. 360
Empire White
Designed to reduce the visibility of the nickeled hinge, presenting only the clean "Empire White" finish. Retails at $7.50.

STASCO
The Seat of Eternal Whiteness



"STASCO" No. 196
Empire White
All-white even to the hinges, this seat, like all "STASCO" "Empire White" Seats, is fully guaranteed. Retails at $9.75.

The NEW RIDGID BLUE BLADE
Makes Hundreds of Cuts
and it's renewable

Made in sizes:
1, 2, 3, 4
Capacities
⅛" to 4"

HERE'S a new and finer RIDGID Pipe Cutter with a new super-steel blue blade that wades into a pipe like a hot knife into a chunk of butter. It makes hundreds of additional cuts—clean, sharp, practically without burr. *This remarkable new blade is blue.* You can identify it instantly. The super-service which this new blue blade gives will literally amaze you. When it has accomplished three times as much as any cutting job you might reasonably expect, it is easily removable and renewable with a new blue blade. Here indeed is the pipe cutter you have hoped somebody would build. Ask your jobber to show you the new RIDGID Cutter with the new blue alloy blade.

The RIDGE TOOL CO.
Dept. D.
Elyria, Ohio

Pipe Vises. Bench, stand, post and kit types in yoke and chain designs. Capacities ⅛ inch to 5 inches.

SUPER-FOUR and SUPER-SIX

Compound leverage for big pipe.

Regular Wrench with housing guaranteed never to break or distort. Sizes: 6 to 60 inches. Also end type.

RIDGID
PIPE CUTTER

Specify

WALWORTH
VALVES
FITTINGS
AND TOOLS

for

PLUMBING
AND
HEATING

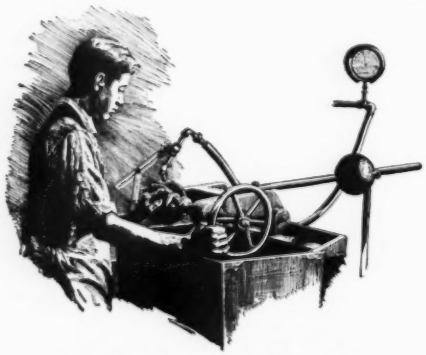
WALWORTH
FLAT BAND
RED
Brass Fittings

Another Quality Line

● A Connecticut builder recently completed a large structure in which thousands of Walworth brass fittings were used. ● Not a single fitting was cast aside on the job; not one leak showed up on test. ● The builder was surprised—but he needn't have been.

● Fittings can't leak on the job when they have been tested with air under water before they leave the factory and when they've been installed by men who know their business. ● Especially when they are made of tough red brass and reinforced with flat bands which give maximum weight and strength at the right spot.

● Of course, we're pleased when Walworth Red Brass fittings prove 100 per cent perfect. But we're not so much surprised. ● We make Walworth Red Brass fittings *for* 100 per cent performance.



TESTING WALWORTH BRASS FITTINGS

WALWORTH

Walworth Company, General Sales Offices: 51 East 42nd St., New York
Plants at Boston, Mass.; Kewanee, Ill.; Greensburg, Pa.; and Attalla, Ala.

. . . Distributors in Principal Cities of the World . . .

Walworth Company Limited, 620 Cathcart St., Montreal, P. Q.
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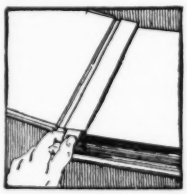
THE HANDY SPEEDLOK
Domestic Engineering Catalog Binder

Especially designed for the standardized catalog page adopted by the plumbing and heating industries

The SPEEDLOK is a quick operating catalog binder designed to fit reprints of catalog pages in "Domestic Engineering Plumbing and Heating Catalog" as well as all other catalog pages that conform to the standards adopted by the plumbing and heating industries.

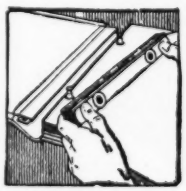
Easy and speedy operation are special features of this binder. A slight pull on the concealed bar under the top cover unlocks mechanism when sheets are inserted. Equipped with bar for removing sheets when changes are made.

Minimum capacity 1¼ inches. By simply unscrewing extension posts capacity can be extended to 2¼ inches. Works perfectly for all requirements—either a few sheets or filled to capacity.



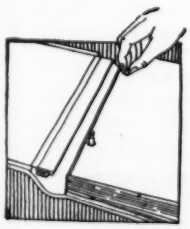
Covers are bound in heavy black Levant Grained Fabricoid, semi-flexible, very durable and attractive looking.

To unlock Binder—Pull out slide bar in top wing. Top cover will immediately fall back.



To lock Binder—bring top wing back over the posts—be sure posts fit in the holes in the top wing—then push in slide bar.

Separate the sheets where desired and slip sheets off the posts. Take out sheets or put in new ones as desired. These three moves take but a few seconds. Each operation is a natural one.



To increase or to decrease the capacity of the binder is a simple operation. The two posts are so constructed that they can be easily raised or lowered to meet the height requirements. Binder posts can be extended from 1¼ inches to 2¼ inches.

Price of binder—$3.00. Prices on quantities on application.

For Plumbing and Heating Contractors—

Many master plumbers and steamfitters assemble working catalogs from standardized catalog sheets filed in binders.

Domestic Engineering is in position to furnish without charge, upon request, loose sheets—which are reprints from catalog pages appearing in "Domestic Engineering Plumbing and Heating Catalog"— of several hundred manufacturers. They are standard catalog page size — 10⅝ x 8½ inches — are printed on a good grade of light paper and punched according to the standard adopted by the plumbing and heating industries. These sheets fit the SPEEDLOK binder.

For Jobbers' Salesmen—

The loose-leaf system reduces to the minimum the bulk and weight of catalog material required by the salesman. Only matter actually required for selling purposes need be carried in the binder. It does away with the necessity of carrying entire catalogs, booklets and circulars of various sizes and shapes.

Salesmen using the loose-leaf system have a great advantage over men not using this equipment—to say nothing of the added convenience, time and labor-saving features.

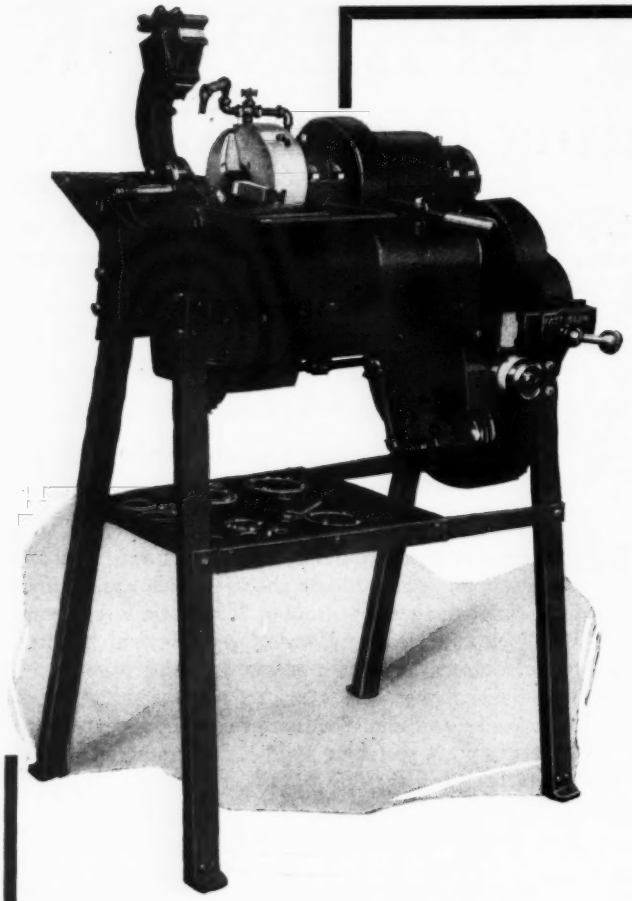
With a modernly equipped loose-leaf binder, the salesman can present his products in a more comprehensive manner than it is possible to accomplish by the old methods. Having all his material up to date in compact form and easily available, he can show latest specifications, answer questions or quote prices more readily.

When orders for binders are accompanied by requests for catalog reprints the binders will be equipped with the sheets desired and shipped complete.

Write for full details regarding loose sheets and binders.

DOMESTIC ENGINEERING

1900 Prairie Avenue *(Catalog Department)* **Chicago, Illinois**



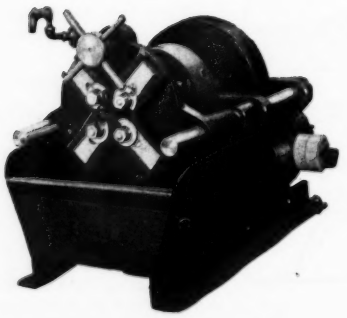
"TOLEDO"
No. 1000M
Cap. ½" to 2" Inclusive

Net Price $350.00
[WEST OF ROCKIES, $367.50]
F. O. B. TOLEDO, OHIO

LEST WE FORGET!

The new No. 999 has not, in any sense of the word, replaced the No. 1000M. When mobility is not a factor you will be wise to consider this high production pipe machine, the "TOLEDO" No. 1000M. Capacity ½ inch to 2 inch inclusive—complete—no extras to buy—already to work for you. Hundreds of the No. 1000M are in service now and giving complete satisfaction.

The sure road to profits is a No. 1000M pipe machine in the shop and the new portable No. 999 on the jobs. Send us a post card for additional information.



The NEW PORTABLE No. 999
NET PRICE COMPLETE $275.00
[WEST OF ROCKIES, $288.75]

THE TOLEDO PIPE THREADING MACHINE COMPANY
TOLEDO, OHIO
NEW YORK OFFICE: 72 LAFAYETTE ST.

"TOLEDO"

OWN A "TOLEDO" PIPE MACHINE AND INCREASE YOUR PROFITS

DOMESTIC ENGINEERING
Plumbing & Heating Contracting and Merchandising

Vol. 130, No. 2
Whole No. 1909

Chicago, Illinois
January 25, 1930

OBSERVATIONS

What Europe Sees—And Envies

The December issue of the bulletin of the International Management Institute, located in Geneva, Switzerland, carries an article on "High Wages and High Production." The institute was founded for the purpose of spreading the idea of scientific management, and it apparently finds that Europe's inability to grasp the related phenomena of high wages and a high level of productivity in the United States, stands in the way of a better understanding of the possibilities of scientific management.

Europe looks with wonder and envy at a young nation whose workers enjoy comforts and luxuries which only the wealthy may command across the Atlantic. Business men of Europe have not been able to see the relation between high wages for workers and the spending power of the nation as a whole which is supporting a vast industrial machine and which is keeping that machine working at top speed.

The American Practice

This is America's great contribution to practical economics. Instead of permitting a traditional enmity between the owners of productive machinery, and the workers, to continue to cloud our vision of inescapable facts, we in the United States have grasped and put into practice the idea that better working conditions lead to increased production and lower costs, as well as to increased earnings for the workers; and those increased earnings in turn form the great reservoir of purchasing power from which is drawn the power for our machinery of production.

It is well to bear this fact in mind in glancing forward into 1930. It is a fact embedded not only in the theory of economics, but in its practice in this country; it is there to stay. Steady employment at high wages is the best guarantee of the continuance of prosperity, and business men know it.

To this must be added another factor. It is an important one, and if we were inclined to grow enthusiastic over the prospects for business in the coming years, we would really feel that such enthusiasm was justified. Even a conservative statement of this factor gives good ground for pleasant anticipation.

Here is the factor: America has worked great economies in production costs, and this has been one of the contributing causes of American prosperity. Now American business men and economists are turning to the problem of working equally great economies in distribution costs. It is plain that if we can reduce the costs of distribution by half the degree that we have been able to reduce the costs of production, the margin of saving will represent another broad conservation of wealth, a smoother working of the whole business machine, and a continuance of, and probable increase in, general prosperity. And Europe will probably still be looking at us with wonderment and envy.

The New Advance

Revising Selling Practices

One can not pick up any publication these days, devoted to matters of business, without finding extended comment on the results of the government's survey among the grocers of Louisville, Ky. The facts developed by that survey have awakened business men to the need for a revision in selling practices and, more particularly, in a revision of sales management.

Roughly, the survey developed that something like 85 per cent of the business of Louisville was coming from something like 10 per cent of the grocers. These figures will not apply to our own industry, for obvious reasons. But with some changes in the statistics, the facts in our field remain the same. Sales costs of manufacturers and of wholesalers have been mounting by reason of selling efforts being expended on those whose buying power is so small that its total in some cases (this was developed in a Buffalo survey) would not pay the salary of the salesman; the profit on its total would probably not buy his cigarettes. Those sales costs have been increased out of all reason by credit policies which had ceased to deserve the name.

Cost of Small Accounts

Now executives who are in charge of sales are beginning to study territories and sales totals, comparing them with sales costs. It is very likely that

sooner or later the sales manager's emphasis will not be on the number of calls his salesmen make, but on the total of profitable business they produce. Salesmen will probably not be required to call on every Tom, Dick and Harry in their territories, and will be expected to devote more of their time to developing business with those retail outlets which, with proper assistance, will show a healthy growth with each passing year.

This last note is struck strongly by those who comment on the need for this new trend in selling. They not only insist that salesmen must get closer to the retailer whose business is profitable; they also point to the need on the part of the manufacturer for closer attention to the publicity and advertising by which he can aid the wholesaler to secure acceptance for his product. One case cited recently showed that a change in policy which included reducing publicity and advertising to the trade, and getting salesmen to practically every outlet, resulted in a decrease in volume.

Selective Selling

This trend, to which we have referred a number of times as "selective selling," is obviously becoming stronger. Most commentators feel that it will be the touchstone of successful selling in the future. The effort to build big volume, without reference to selling costs, has placed a big burden of loss on American business in almost every field. With the introduction of more scientific methods of sales control we see another factor favorable to American prosperity coming into play.

Retailers' Problems

The "Retail Ledger" publishes a list of the nine leading problems of retailers for 1930. They are: Style, more scientific merchandising, credits and collections, service, cost of distribution, better education of sales people, better advertising, returned goods, chain-store competition.

This list applies, of course, to the retail store which handles staples; but, with the possible exception of the eighth—returned goods—it applies equally to the plumbing and heating store.

Break Down Problems

It would be worth while for the plumbing and heating contractor to make this list the basis for a systematic study of his problems and how he is to solve them for 1930. If he will take each of the items in turn, think over all of its angles, and determine just what his policy is to be during this year, he will have taken a long step toward the conservation of profits.

No one of these problems is insurmountable. The plumbing and heating contractor who is capable of understanding the mechanical needs of plumbing and heating installations, will have not the slightest difficulty in grasping fully the bearing of each of these problems on his business, or in working out a policy which will protect his business against waste and inefficiency.

What we are driving at is this: There is a logic back of everything that is done in installing a system of plumbing. Similarly, there is a logic back of what the successful retailer does in installing a system of handling credits and collections, handling his advertising, finding his costs, etc. For the most part, the logic consists of common sense.

If, in connection with some of these problems, it seems that more expert help is required, it is available. The contractor has every right to expect that the salesman of the wholesaler or manufacturer who calls on him, will be in position to give him assistance. He should have picked up, in the course of his calls, a number of practical ideas which have already been worked out by others successfully.

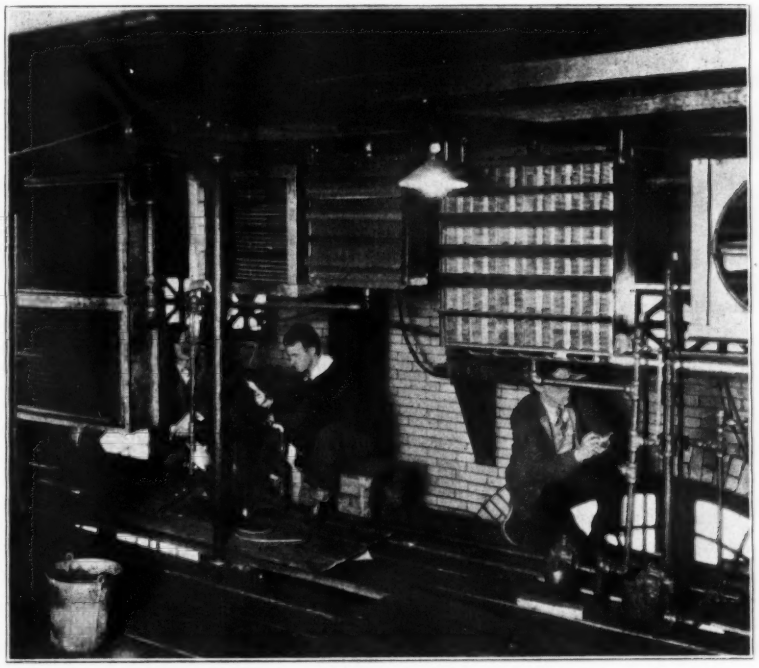
Advertising Help

In the matter of advertising help, DOMESTIC ENGINEERING publishes in each issue two pages of this material; and, in addition to this, the constant stream of stories appearing in the "Plumbing and Heating Merchandising" feature section will give him a choice of newspaper advertisements, sales letters, circulars, and general merchandising ideas which other men in the field have worked out and proved practical. From time to time, special material, such as the remodeling campaign, appears in our pages. And we stand ready to assist readers at any time in working out specific merchandising problems.

In attacking business problems, it is well to follow the best practices in estimating. Some men will "look over" a job and give a lump estimate. Others break the job down into its component parts, roughing-in materials, fixtures, labor, fittings, etc. Obviously, the last method is the one which promises any profit. So with facing business problems. Some men never get beyond a general "looking over" of their business. The way to solve business problems is to break them down into their component parts.

Setting the Policies

The list of matters for consideration in the first paragraph of this editorial gives you the breakdown. Now you can study each problem separately, decide that you will do thus and so with reference to credit and collections; that such and such improvements must be made in your cost-keeping records (and get expert help here if necessary); that your merchandising is going to be regularly controlled and not indulged in spasmodically. So on, through the list. A few hours of concentrated thinking, and you can set your policies for the year. The break-down of your problems will help you do the job efficiently.



Unit heater set up in the top of the Heating and Ventilating Laboratory at Carnegie Institute of Technology used for condensing steam for determining capacity of pipe in steam heating system. Measuring apparatus located in the lower part of the laboratory

Progress *in* Research *in the* A. S. H. V. E. Laboratory

By F. C. HOUGHTEN

LAST summer marked the tenth anniversary of the establishment of the research laboratory of the American Society of Heating and Ventilating Engineers.

Those interested in heating and ventilation agree that the laboratory has been a very important factor in placing this branch of the engineering industry on a sounder and more professional basis. While the benefits of research are much more commonly recognized today than they were ten years ago, there are still those who erroneously believe that research is a mysterious and mythical procedure beyond their power of understanding. Every progressive man whether he is a mechanic, business man, engineer, or if he practices some other profession, carries on research continuously although he probably does not dignify it by this term. Every experiment or attempt to find a better or more economical way of doing a piece of work, every attempt to produce a new or better product, or to find a new use for an old product, and every effort to carry out a physical process

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IT often happens that when the man who works in the field hears research mentioned he draws into his shell and feels that the subject under discussion is far over his head. This article points out that practically all of us engage in research at some time or other, although we may not dignify the work by that name. Also, it is clearly pointed out that there is nothing mysterious about research.

The research program of the American Society of Heating and Ventilating Engineers is outlined, indicating, by the subjects, the great value of the work being carried on to the practical man in the field. Actual research work is described in connection with a recent investigation to determine the capacity of radiator supply branches. This tells the object of the study, how it was carried on and the results obtained with references to the complete and detailed report which appeared in the January 11th issue of DOMESTIC ENGINEERING.

in a new and better way is an experiment, and should, strictly speaking, be considered research.

Many experiments or research investigations can be carried on best in the field, or in connection with ordinary routine practice. There are some research investigations, however, which cannot be carried out in ordinary practice for the reason that they interfere with the satisfactory, normal activity. Still other attempts at research cannot be carried out in practice for the reason that surroundings are not satisfactory or because the various factors to be considered in such an investigation cannot be controlled as desired.

Research Divided Into Two Groups

Research may be divided generally into two groups. First, results gleaned or derived indirectly from known facts and experience as recorded in the available literature or through conference of expert persons. Such research is sometimes called library research. Second, research may be carried on in a laboratory where the necessary manipulation or experiments can be made with the desired factors controlled. In establishing any new idea or developing any fact through research, it is always desirable to go as far as possible with the first type of research—that is, library research and interchange of ideas by experts in the field, and only after this means has been exhausted and a definite plan of attack has been devised, should actual work in the laboratory begin.

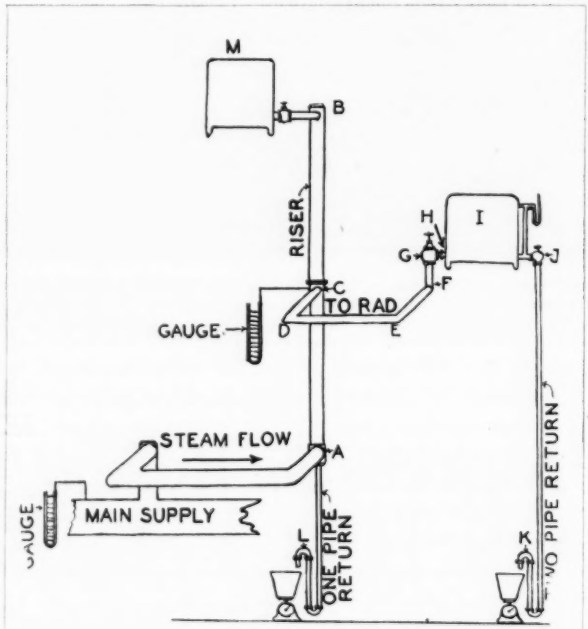


Fig. 1.—Laboratory set-up for studying radiator branches

The research laboratory of the American Society of Heating and Ventilating Engineers recognizes the value of both types of research and the need of applying library research before taking the problem into the laboratory. In connection with every research investigation considered by the laboratory there is a technical advisory committee of the best experts in the world in that particular field appointed to consider the needs of the investigation from every angle and only after they have decided upon the type of data needed as the result of study and conference is the problem actually attacked in the laboratory.

The following is a list of research investigations carried on by the research laboratory of the American Society of Heating and Ventilating Engineers in Pittsburgh and in co-operation with various universities:

1. Determination of capacity of pipe for carrying steam, water, and air in various parts of a steam heating system. This study is being made under a co-operative arrangement in Professor Dibble's heating and ventilating laboratory at the Carnegie Institute of Technology.

2. Determination of heat loss through various types of building construction. This study is being made by Professor Rowley at the University of Minnesota in co-operation with the research laboratory.

3. A study of the laws governing heat transfer from air to inside surfaces of walls used in building construction and from the outside surfaces of such walls to the atmosphere.

4. A study of wind velocities near a wall surface in relation to wind velocities found in open spaces or recorded by the weather bureau.

5. A study of the effect of wind velocities on heat loss from the outside surface of building walls.

6. Determination of heat transfer coefficients for various new building and insulating materials used in building construction.

7. Study of pipe sizes for hot water heating systems. This study is being made by Professor Giesecke at the Agricultural and Mechanical College of Texas in co-operation with the research laboratory.

8. Determination of standards of ventilation or the relation between air conditions in a room to a person's health, feeling of comfort and well-being.

9. Determination of heat and moisture dissipated from the human body to the atmosphere and its effect on air conditioning the atmosphere in audience halls.

10. A study of infiltration or air leaking into buildings around windows and doors and through walls and the effect of weather stripping, calking, plastering, and painting in reducing heat loss from such leakage. This study is being carried on both in the laboratory in Pittsburgh and by Professor Larson at the University of Wisconsin in co-operation with the research laboratory.

11. A study of factors affecting the heat given up by a radiator in a room and other studies of direct radiation with a view of developing a standard code for testing and rating radiators. A large part of this work has been carried on by Dean Potter, Professor Young, Professor Hoffman, and Professor Hotchkiss at Purdue University in co-operation with the research laboratory.

12. A study of boiler performance with a view of developing a code for testing and rating boilers. A part of this study was carried on by Dean Anderson of the University of Kentucky in co-operation with the research laboratory.

13. A study of unit heater performance with a view of developing a standard code for testing and rating unit heaters. This study was carried on by Dean Anderson

of the University of Kentucky in co-operation with the laboratory.

14. A study of air delivery through grilles to and from a ventilated room with a view of developing a standard method of making such measurements. This study is being carried on by Professor Davies of Armour Institute of Technology in co-operation with the Chicago sheet metal contractors and the research laboratory.

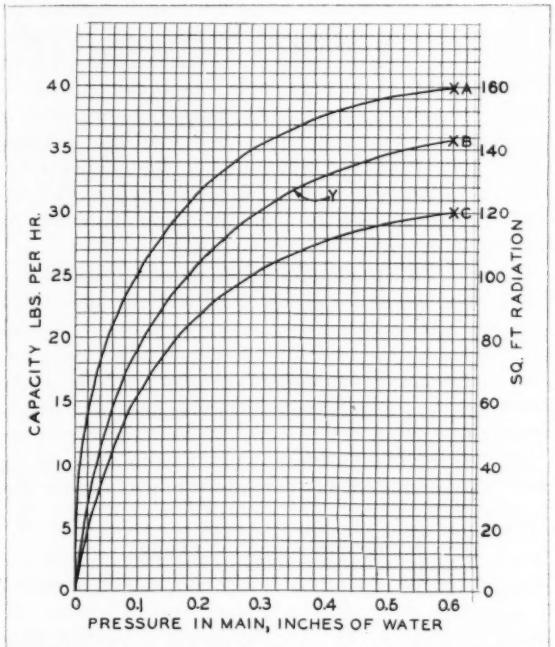


Fig. 2—1¼-in. One pipe branch. 3½-in. pitch in 10 ft. Curve A, no valve, 1½-in. fittings, 1¼-in. pipe. Curve B, no valve, fittings and pipe, 1¼-in. Curve C, valve, fittings and pipe, 1¼-in., nominal size

15. A study of oil burner performance with a view of developing a standard code for testing and rating oil burner performance and heat delivery. This study is being made by Professor Seeley of the Yale University, in co-operation with the laboratory.

16. A study of vital characteristics of the atmosphere affecting health and comfort of man. This study is being carried on by Professor Drinker and Professor Yaglou at the Harvard School of Public Health, in co-operation with the research laboratory.

17. A study of methods of determining the dustiness of air and performance of air cleaning devices including filters and washers with a view of standardizing the methods of determining air dustiness and developing a code for testing air cleaning devices. This work is carried on by Professor Rowley at the University of Minnesota in co-operation with the research laboratory.

18. A study of the relation of volume and method of delivery of air handled in ventilating garages to accumulation of carbon monoxide, inflammable vapors, and other obnoxious factors. This study is carried on by Professor Langsdorf of Washington University, St. Louis, in co-operation with the research laboratory.

Some of the research investigations made at the laboratory are of such a practical nature that every heating man at once recognizes the value of the application of the results to his business or practice. Other research investigations carried on by the laboratory are not of quite such a practical nature, but the results are nevertheless of value in establishing some fundamentals on which this branch of the engineering profession and industry is based. While the results of such studies may not be felt immediately or directly in any particular man's engineering practice, they frequently are most effective in the long run in improving the entire profession and industry or in advancing the service of the profession to mankind.

Research in Pipe Sizes

One of the most practical research investigations undertaken by the research laboratory and one which may be most appreciated for its immediate application by the readers of DOMESTIC ENGINEERING, is that of determining pipe sizes for various parts of a steam or hot water heating system.

Any man with a little experience can lay out and install a steam heating system provided he makes all of the pipe in the entire system large enough so as to insure that he will not approach the danger line in any part of the system. To be sure, such a heating system will probably not give the proper distribution of steam to all parts of the building at all times, which is of course,

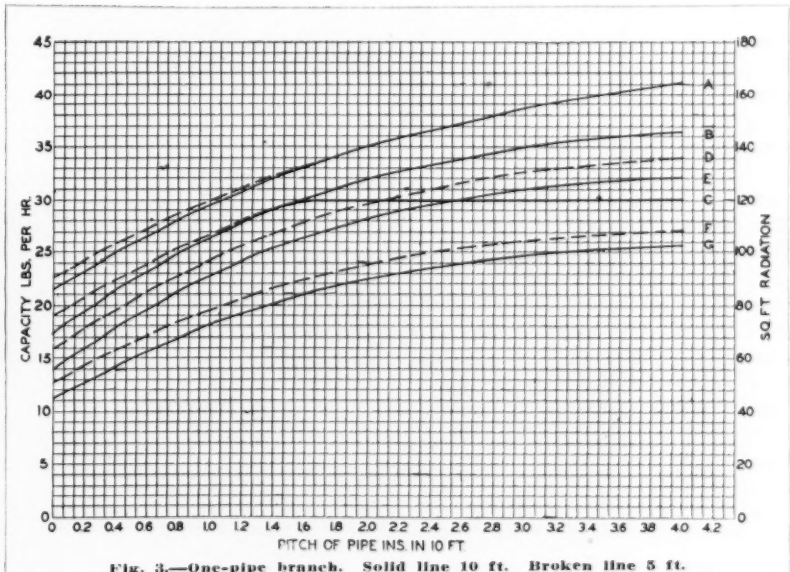


Fig. 3.—One-pipe branch. Solid line 10 ft. Broken line 5 ft. Curve A, no valve, 1½-in. fittings, 1¼-in. pipe. Curve B, no valve, fittings and pipe 1¼-in., nominal size. Curve C, valve, fittings and pipe 1¼-in. nominal size. Curves A, B and C, maximum capacities with noise. Curves D and E, maximum capacities without noise of a 1¼-in. branch and fittings and no valve. Curves F and G, 80 per cent of maximum capacity with no noise

a requirement of a good heating system, but it will, nevertheless, give sufficient heat. However, to lay out a well proportioned system in which the pipes are neither larger and more costly than necessary, nor too small to give good service, and which will give satisfactory distribution of steam to all parts of a building at all times, one must have accurate knowledge concerning the capacity and frictional resistance of pipe for carrying the necessary steam, water, and air in the various parts of the system, particularly in the supply and return risers, supply and return mains and radiator supply branches. Such information was not available, or at least was not available in such form that any material percentage of those using such data had confidence in it, until the Research Laboratory undertook the study a few years ago. Since this study was inaugurated the laboratory has made careful study of supply risers for one and two pipe systems, supply mains for one and two pipe systems and radiator supply branches. The results of these studies are now published in the proceedings of the society. A study is now being made of the capacity of return pipe.

Description of One Phase of Pipe Size Study

A brief description will be given here of the method of attack on one particular phase of the pipe size study. This will not be given for the purpose of conveying the practical results of the study to the reader, but rather to acquaint him with the procedure in making such a research investigation. It should be borne in mind that there is nothing mysterious in research, but rather it is an attempt to discover the laws of nature governing certain engineering processes and that all that is necessary for carrying on scientific research is an understanding of the physical and chemical laws which apply to the particular case, and ability to apply logical and mathematical reasoning to the results in order to arrive at the proper conclusions.

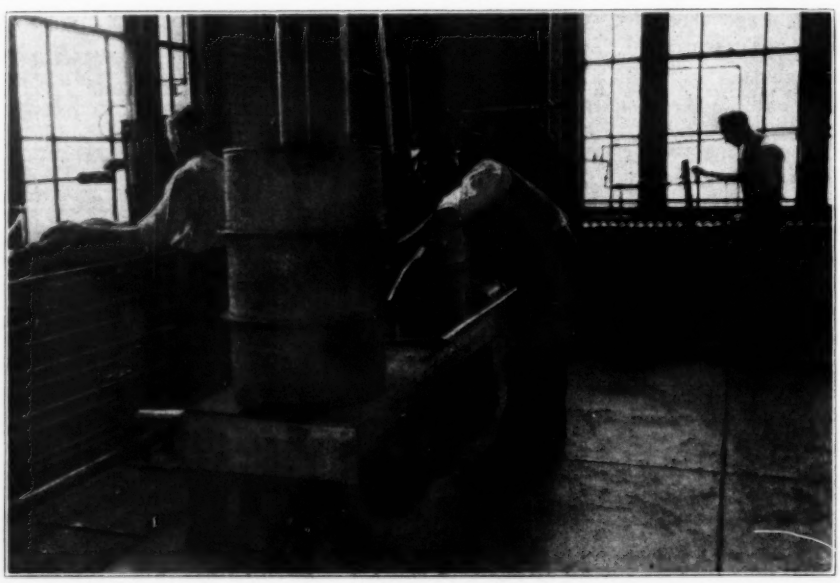
In investigating the capacity of radiator supply branches a great many factors must be taken into consideration, for the capacity of such a branch depends not only upon the size of the pipe, but also upon its length, whether it is a one or two pipe connection, the pitch of the branch and the fittings in it. In order to make a study of these various factors, the laboratory built a very simple experimental apparatus in Professor Dibble's heating and ventilating laboratory at the Carnegie Institute of Technology. In this connection, it was desirable to entirely divorce from the study all factors or parts of the system which do not affect the branch.

Upon careful consideration it becomes obvious to one that the capacity of a radiator branch is not affected by the supply main or the riser carrying steam to it; neither is it affected by the type of radiator or other apparatus in which the steam is condensed, or used. As far as the branch is concerned, the steam passing through it might either be condensed in a cast iron radiator, a unit heater, a water-cooled condenser or an engine so long as the steam is used continuously and uniformly as supplied by the branch.

Apparatus Used in Study

In making the study of capacity of radiator branches, the apparatus shown in Fig. 1 was used. The riser *AC* supplying steam to the branch studied *CH*, was made large enough so that it did not in any way limit the steam flow to the branch. In most of the tests, the radiator, *I*, was replaced by a water-cooled condenser in which the demand for steam could be increased or decreased at will by controlling the cooling water. This had the same effect as enlarging or decreasing the size of the radiator

(Continued on Page 106)



Set-up for making observations on condensation returning from a pressure drop through return lines from unit heaters located in the top of the building in a study of capacity of return sizes for steam heating

Modern Guides *in* Plumbing Installations

By
R. M. STARBUCK, JR.

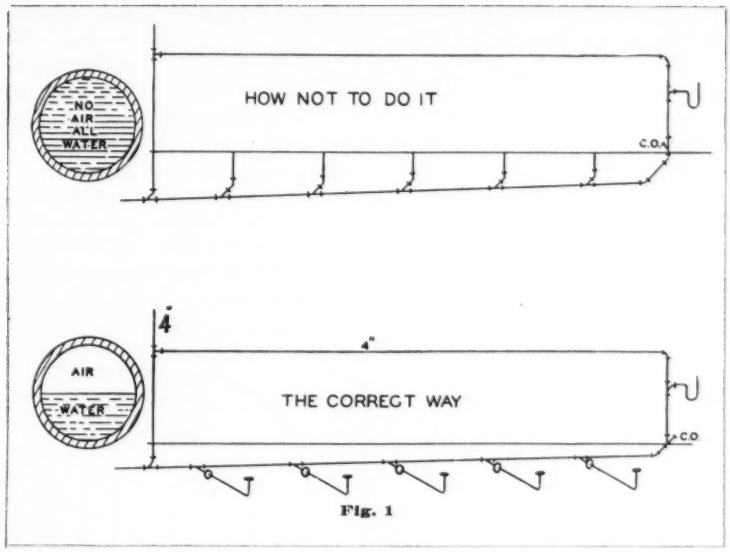


Fig. 1

THE plumbing trade is getting much more instruction and help in the correct installation of plumbing equipment than it once did. This comes from two principal sources,—from local municipal plumbing departments and from manufacturers. We believe there is much valuable information to be had from both directions. It is not that every manufacturer or every plumbing board does this thing, but that the tendency is very much in that direction.

Today manufacturers' catalogs are often a veritable mine of practical information. Plumbing departments of many cities are providing valuable instruction also, in a somewhat different way. This work is being accomplished in two different ways,—by the use of typical illustrations shown in connection with the city plumbing code, and by the issuing of blue prints, black prints and mimeograph prints illustrating and presenting data concerning any particular installation which needs special explanation. Often this is done when new methods of practice are put into effect. The method is very effective, and often presents instruction, connections and data that are very valuable.

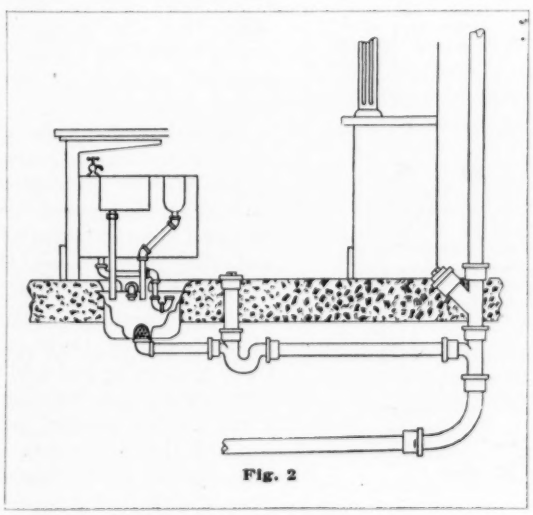


Fig. 2

All these things are good business on the part of the manufacturer, and just as good business on the part of the plumbing department. In the latter case it provides authorized instruction and information which is reflected in more correct work on the part of plumbers, with corresponding increased profit to the trade and less inspection difficulties for the plumbing department.

An Example of Circuit Venting

Quite recently the plumbing inspection department of Greensboro, N. C., through its efficient plumbing inspector, Wm. N. Jennings, arranged several of these instruction sheets, and one feature in particular seemed very clever to us, and capable of accomplishing a great amount of good. This is shown in Fig. 1.

As will be obvious, this illustration covers the subject of circuit venting, and it covers it in a most excellent way. The point that is of special value is the use of the two sectional views. These represent cross sections of the horizontal soil pipe. According to the Greensboro practice, in circuit and loop venting the branch drainage fittings must be "laid flat," as in the lower illustration, and not with the branch pointing upward as in the upper view. Simple as this requirement may seem to be, it involves a principle which in our opinion is vital to the correct operation of circuit venting. We have discussed the point several times in the past.

We think we are correct in saying that of the hundreds of municipal plumbing departments in this country, very, very few are taking this point into consideration. We are therefore greatly pleased to see this evidence that this improvement in circuit venting practice is gradually receiving the attention it deserves. As far as we know, its chief observance in the past has been in the state of Ohio. This state

for some time has required that drainage fittings on circuit-vented lines be laid flat.

The Principle of Venting

There should be a general understanding of the principle involved in this requirement, and we shall try to explain it.

It will be understood that in order to vent, a vent pipe must convey air and deliver it at a point where its admission will overcome any tendency for the trap seal to siphon out. In the case of circuit venting, the horizontal soil line not only must carry off the waste, but it must also convey air to the several fixtures discharging into it.

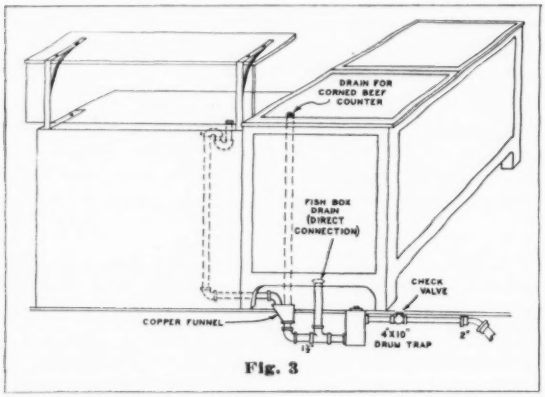


Fig. 3

When the waste fitting branch points upward, as in the upper view of Fig. 1, a curtain of water is formed across the horizontal soil line at the point where the branch enters, every time a fixture is flushed. When two or more fixtures are flushed simultaneously, this effect becomes even greater.

Horizontal Lines Should Not Run Full

Now then, when the branch is laid flat, the waste from the fixture flows into the horizontal line smoothly, and without forming a water curtain such as described.

Not for a moment would it be felt that it was good practice to allow conditions that would result in the horizontal line running full. That would not only prevent any venting whatever, but it would create a strong siphonic influence. That condition actually is set up when the branch of the waste fittings point upward in circuit venting.

The use of the two cross sections in Fig. 1 illustrates what happens in a very clear manner, and this graphical method of driving the point home should result in a clearer understanding of the situation, not only in Greensboro, but in the case of those who read this article.

We are not over-emphasizing the subject when we say that every plumbing code should include the requirement that these drainage fittings be laid flat.

Soda Fountain Installations

The city of Greensboro also puts out instruction sheets showing the way to correct the installation of many other plumbing installations. One of these we show in Fig. 2, which illustrates the requirements in the installation of soda fountain bars.

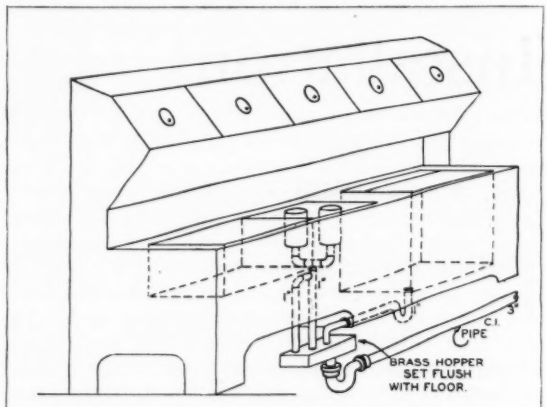


Fig. 4

Much more attention is being paid to these features of plumbing practice than in times past, for it is becoming more and more recognized that wherever plumbing operations have to do with food, utmost precautions must be taken to guard against contamination.

In some cases a distinction is made in connecting different parts of the soda fountain equipment, it being considered that a sink compartment because it does not store food, may be connected directly to the drainage system, whereas a compartment for holding ice cream should have an indirect connection in order that the danger of contamination may be guarded against as completely as possible.

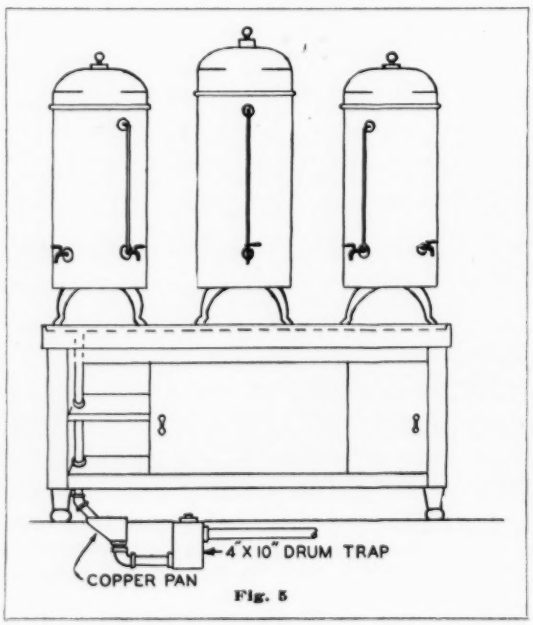


Fig. 5

Because of this view, we are more inclined to believe in the use of an indirect connection for every section of a soda fountain bar, and this is the way the work is handled in Fig. 2.

In the plumbing practice of the city of Oakland, Calif., particular and intelligent attention has been given to the general subject of the protection of food against contamination from the plumbing system. Many cities content them-

selves with guarding against this contamination as it concerns refrigerators, but in the case of Oakland, definite instructions are laid down for meat and fish counters, ice cream cabinets, and for various restaurant equipment.

Fig. 3 shows the Oakland method of connecting a meat and fish counter. Two of the drains it will be noted, are indirect connections and a third is direct. The indirect connections serve drains that would be liable to contaminate food unless precautions were taken against such a result.

Fig. 4 gives the detail of drainage connections for an ice cream cabinet, all of them being indirect.

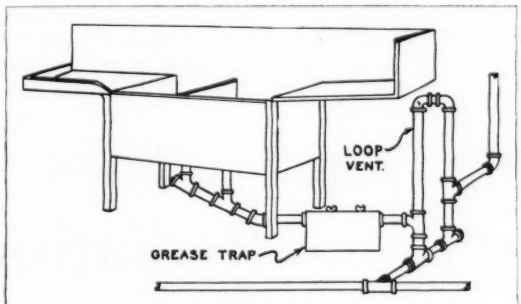


Fig. 6

In Fig. 5 is shown the drainage arrangement for a battery of coffee urns such as commonly seen in restaurants.

None of these illustrations show installations that are novel or remarkable, but they are not common connections, such as used for the half dozen plumbing fixtures in use in every home. In our opinion it is an excellent idea to present proper methods of practice in many of these more or less uncommon installations, in picture form. They serve to make each type of connection a definite thing. For instance, we can conceive that many would fall into the error of giving the safe under the coffee urns, a direct connection. Such an illustration as Fig. 5, brought to the attention of those installing the work, settles any question of this nature at once and finally.

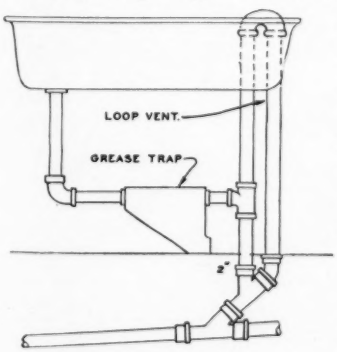


Fig. 7

Grease Traps

Fig. 6 gives the Oakland method prescribed for restaurant dishwashing sinks, from which it will be seen that a grease trap must be employed. This is likewise true of sinks used in any place where grease is likely to collect. The Oakland regulation concerning use of grease traps specifies their use for "restaurants, hotels, boarding houses, butcher shops, slaughter houses, packing houses, creameries, butter factories, bakeries, or other places where greasy waste is discharged."

Figs. 6 and 7 show in each instance, a special form of vent. The vent is known locally as a loop vent, although that is a term generally applied to a modification of the circuit type of vent.

Such vents of course should not be used whenever the correct method can be employed. There are instances, however, when sinks and other fixtures set well out from a side wall or into the open space of a room, where such a vent may be made use of.

The vent shown in Fig. 7 is especially open to question. We presume it may be better than no vent, but how much better we hardly know.

Fig. 8 shows a cross section of a catch basin for use in garages and for other uses, which seems excellent.

Greensboro, already alluded to, recommends the practice shown in Fig. 9 for garage connections.

The trap and all connections are made by the use of common cast iron fittings. It will be observed

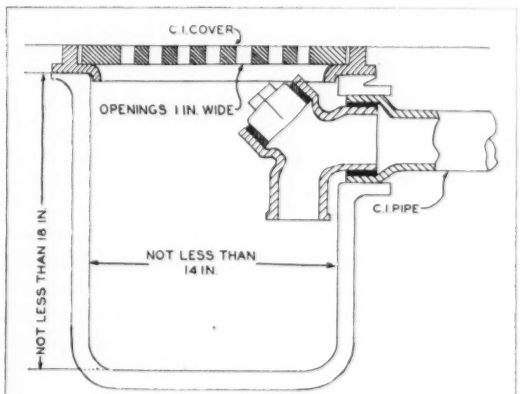


Fig. 8

that there is a ⅜-in. hole on the heel of the bend which opens into the catch basin. This is for the admission of air for the prevention of siphonage. Such a catch basin outlet should be 4-in., and with that size pipe in use we fail to see how there could be any danger from siphonage.

The work in Fig. 9 is very well conceived, except for the ventilation of the catch basin. While most catch basins require no ventilation, the garage catch basin is very dependent on ventilation. This is because so much gasoline enters it. The proper method is to run a 3-in. ventilation pipe from a point in the catch basin above the water level, up through the roof. When gasoline discharges into the catch basin, it quickly vaporizes, and the fumes are quickly and forcibly carried through the ventilation pipe, and discharged at a point where they can do no harm.

From the foregoing it will be seen that the ventilation pipe, to render good service, must open into the catch basin above the water level. In Fig. 9 there is no ventilation pipe opening into the catch basin. There is the lavatory pipe or stack, which passes through the roof, however, and it may be that this is supposed to ventilate. It would be impossible for this stack to ventilate, however, for it is trapped. All that this stack can do is to vent the sewer and the catch basin trap.

(Continued on Page 143)

A study of insulation by the heating contractor is necessary as a matter of self preservation.

Heating systems have been and are being criticised for not heating homes when the fault has not been with the system, but, instead has been due to excessive heat loss from the building, a condition which may be corrected, in both old buildings and buildings under the process of construction, by the proper application of insulating materials.

J. D. Preble, who forceably brings out these ideas in this article, was a member of the special committee of four of the Illinois Master Plumbers' Association which compiled information for their "Special Bulletin" on factors to use in calculating the radiation required in buildings using various types and kinds of insulating materials and the different applications of the material.

Insulation Factors to be Used *in* Calculating Radiation

By J. D. PREBLE

NOT so many years back the home that had any type of central heating plant installed was very much the exception, such system being considered one of the luxuries obtainable only by few. The few central heating systems that were installed were heating systems in name only because but very little satisfaction and comfort were realized from them. It is an every day experience with our modern methods of engineering that we find such so-called central heating systems that have to be completely rebuilt in order to give the home owner the heating comforts which are demanded in the home today.

It is not uncommon to find steam heating systems, the installation of which was dictated from the number and size of radiators available rather than from what good engineering practices required; engineering practices that we speak of in common terms today of course being unknown at the time when these early installations were made.

So much for the old type heating installation because we have much more important facts to discuss—a discussion of practices which fit present day requirements. The statement that the public demands comfort and convenience has been repeated so often that it is now an accepted fact applies directly to the heating field. Further, this is a day of

Fig. 1.—This house was insulated both on the side walls and on the ceiling. The effect of insulation on the fuel consumption of the heating plant was estimated to within less than 6 per cent of the actual amount burned

Fig. 2.—Watch for the roof which stays covered with snow. The building heat losses are reduced to a minimum therein. This is a residence in St. Louis, described in case 5, where insulation was installed when the building was constructed

mechanical, automatic operation, giving people of today carefree conveniences that were unthought of but a few years back. For example, there are but few street car and like transportation companies today that have been able to compete with personal motor transportation. There is no longer any thought given as to whether it costs more than the 5, 7 or 10 cents to drive the mtor to our place of business rather than take the street car. It is now considered a necessity that we step into the car and go where we want to go, when we want to go.

General Demand for Comfort and Convenience

It has only been a matter of the last four or five years that mechanical refrigeration has developed from nothing to a place where it is considered a necessity in the modern home. Paralleling this development there has been a common demand for automatically controlled and operated heating plants. Today this country is filled with thousands of automatically operated oil burners and gas boilers. There are additional thousands of thermostats placed on coal boilers to obtain a measure of automatic operation. Automatic coal stokers are also serving to fill the demand for automatic heat.

With these demands for convenience we have also developed an exacting demand for comfort. In a very large portion of this country the comfort experienced in living in a home is directly dependent upon the heating system in that home. Where we used to be satisfied with one room properly heated we now find that every room in the home must be properly heated, because instead of living in one room, people are now living in the entire house. The heating plant, to be satisfactory, must be able to furnish this comfort regardless of weather conditions.

This means that we are now faced with the exacting problem of balance of the heating system in the home and with this balancing many problems arise which are not controlled by the heating trade.

For example, consider a home with a sunparlor. Here we have an excessive amount of glass and naturally an excessive heat loss. Further, the average sunparlor is built over unexcavated area and is but one story high. In such a room we, therefore, have heat losses from three sidewalls. We have a relatively cold space under the floor and also have a heat loss through the ceiling, in addition to the excessive loss through the glass.

It is true that modern engineering practices have developed methods of measuring very accurately these various sources of heat loss. There would be a relatively large amount of radiation in such a room as that outlined above. However, the fact still remains that when the temperature is dropping there is a great likelihood that while the main body of the home experiences a drop of 2 to 3 degrees, the sunparlor would likely have a temperature drop of 5 to 6 degrees.

Two Objects May Be Accomplished with Insulation

There are many other similar conditions as outlined above which are very difficult to overcome unless some careful study is given in the construction of the home. Such conditions introduce a definite need for insulation. The need of insulation, it seems, can best be divided into two classes; first, to be used in varying quantities throughout the home to cure already existing lack of balance in the heating system; second, to be used throughout the home to reduce heat losses through walls and ceiling.

A few examples of using insulation to bring about the balance of existing heating systems have come to my personal attention. The use of insulation in sidewalls, floors and ceilings of sunparlors has been effective repeatedly. A very good example was experienced in a home the main portion of which was practically square, two stories high and of brick veneer construction. On one end of the house a one-story garage had been attached, built of frame construction finished with wide clapboard. This was balanced on the other end with the living room, also one story high and of the same construction. The space under the floor was unexcavated and the ceiling had nothing but lath, plaster and tar, and a gravel roof.

A complaint of poor heating conditions brought

about a careful rechecking of the heating system. All the sources of heat losses had been given proper consideration and the specified radiation necessary was installed, yet there was a temperature variation in this one room of 8 degrees while the variation in the main part of the house was 1½ to 2 degrees.

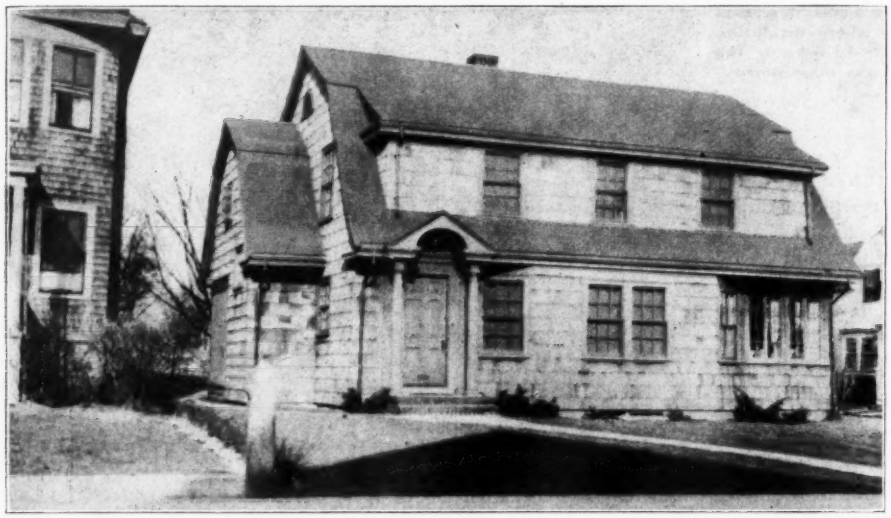


Fig. 3.—In this building, described in case 1, board type of insulation was applied to the ceiling and side walls during construction

The owner was willing to put more heating capacity into the room, however, he was prevailed upon to place insulation immediately under the floor, over the ceiling and in the sidewalls, a 4-in. fill insulation being used. After the installation of this insulation the variation of temperatures in this room was even less than in the balance of the home, and the owner was then convinced that it was the peculiarities of the construction of his home rather than the heating system that caused his trouble.

This case is very common. The heating system was severely criticized but in reality it had been properly installed and the proper amount of radiation had been used. It is a good example of unjust criticism and is a criticism which cannot be properly placed unless the heating contractor takes it upon himself to make a complete and careful study of insulation and its effect on heat losses. Such a study is necessary as a matter of self-preservation.

The development of the insulation field has progressed with the heating industry, home building, and other fields of activity. Today there is practically any type of insulation material on the market that is desired. There is no single type that can be applied universally but some one of the insulations will fit any reasonable need. There are many insulations that can be installed in the new home as it is constructed and there are some insulations that can be installed to good advantage in the old home.

Complete Data Available on Insulating Effect

As the field of insulation manufacturing progressed there came a general demand for exact and accurate information as to its effect upon heat losses. Any number of outstanding laboratories have made scientific studies of the properties of insulation and further, have studied the individual insulating materials. Some of the outstanding studies of this problem are those conducted by the U. S. Bureau of Standards, Washington, D. C.; the American Society of Heating and Ventilating Engineers; the University of Minnesota; and the University of Illinois. These studies have developed accurate conductivity factors for all insulating materials that are on the market today. Such agencies as those outlined above are in a position to give the scientific, unprejudiced facts regarding all such materials.

Illinois Master Plumbers' Association Investigated Insulation

One of the first associations of heating men to recognize the value of insulation in the home and to assign values to the various types of insulation in calculating their heating plans, was the Illinois Master Plumbers' Association, who in 1928 issued their "Special Bulletin on Factors to Use in Calculating the Radiation Required in Buildings Using Various Types and Kinds of Insulating Materials and the Various Applications of the Materials."

The effectiveness of their bulletin was enhanced by the simplicity with which it was prepared. The calculations, even though based directly upon the B.t.u. method of figuring heat losses, were placed in the hands of the association members in simple factors that could be assigned to the different insulation materials. For this study they divided these materials into three different classes, namely:

1. Board insulations—those insulations manufactured and sold in a board type.
2. Quilt insulations—those materials manufactured and sold in flexible and semi-flexible sheets.
3. Fill insulations—those insulations manufactured and sold to fill the entire studding spaces in the sidewalls and recommended in thick layers over the ceilings.

The following examples illustrate the simplicity

and accuracy of this method. As shown by the calculations, the method is developed directly from the standard B.t.u. heat loss calculations.

Assuming a temperature difference of 70 deg. through a given wall, that is maintaining a home at 70 deg. Fahr. with the outside temperature 0 deg. Fahr., then the square feet of radiation required to offset the heat loss from one square foot of exposed wall is:

$$\text{Square feet of steam radiation} = \frac{70 \times U}{240} \text{ or } \frac{240}{70 \times U} = F$$

(the number of square feet of wall equivalent to one square foot of steam radiation), see Figs. 4, 5, and 6. Therefore, to determine the number of square feet of steam radiation necessary to supply the heat loss from a known number of square feet of exposed wall, it is only necessary to divide the net area of the exposed wall by the factor F. i. e. No. 1 (Example No. 1, page 7, of special bulletin.)

$$\frac{240}{70 \times U} = F. \quad U = .231.$$

$$\frac{240}{70 \times .231} = \frac{240}{16.170} = 15.$$

By the same calculations:

$$F = \frac{150}{70 \times .231} = \frac{150}{16.17} = 9$$

(the number of square feet of net exposed wall equivalent to one square foot of hot water radiation.) The factor U is the coefficient of heat transmission through a given wall section in these examples; or expressed in other terms, U is the amount of heat in B.t.u. transmitted through a given wall per square foot of wall per hour per degree temperature difference between the air inside and the air outside. This is calculated from the commonly acceptable method known as the "Addition of Reciprocal Method":

$$U = \frac{1}{\frac{1}{K_1} + \frac{1}{K_2} + \frac{X_1}{C_1} + \frac{X_2}{C_2} \text{ etc.}}$$

K_1, K_2 = Surface coefficients or the B.t.u. transmitted per hour per square foot of surface per degree difference in temperature between the surface and the air.

C_1, C_2 = Coefficients of conductivity or the B.t.u. of heat transmitted per hour per square foot per degree difference in temperature between the surfaces per inch of thickness of the material.

X_1, X_2 = The thicknesses of the materials.

The American Society of Heating and Ventilating Engineers has gone into this problem in a more theoretical and much larger scale. The results of their findings are published in their annual Guide. The American Gas Association has also made a study of the insulation problems. Their findings can be found in their publication "Industrial Gas Series—House Heating—Second and Third Editions," and also in the annual report of their House Heating Committee for the years of 1927 and 1928.

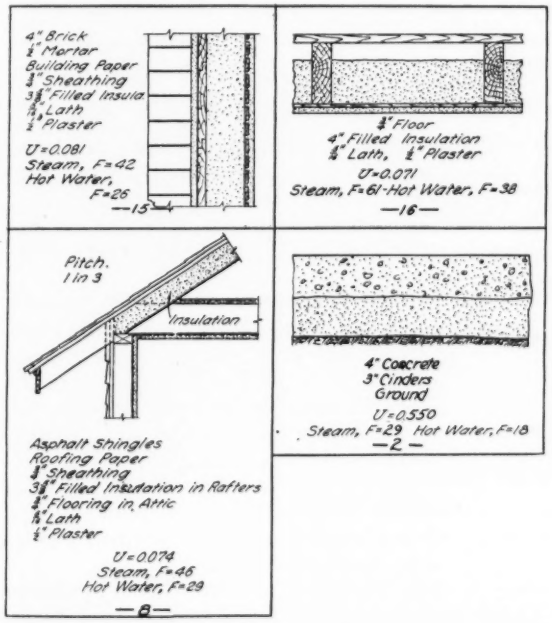


Fig. 4.—Cross-sections of walls made up with typical fill insulation, giving values for heat losses as determined by the investigation carried on by the Illinois Master Plumbers' Association

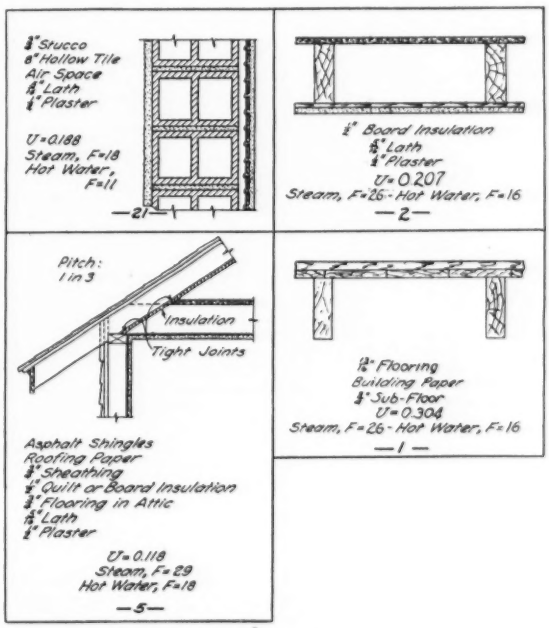


Fig. 5.—Typical examples of board insulation installations. Compare the values determined for the hollow tile construction in the above without insulation with the hollow tile construction illustrated in Fig. 6, having quilt insulation

Insulating Values for All Insulations in Each Class Averaged

The satisfactory part of all these findings is that with many laboratories studying the same problems simultaneously their findings in principle were the same. It is true that while one laboratory might have found material to have a heat loss conductivity factor .24, the second might have found a conductivity of .231, the third might have found a conductivity factor of .234, etc., the reports are so closely in agreement that the differences are really well within the boundaries of laboratory error. Further, the slight variation that exists in various reports is really

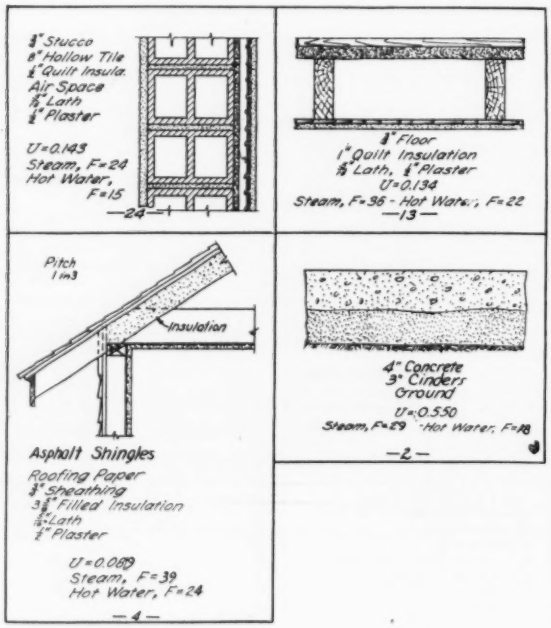


Fig. 6.—Typical examples of quilt insulation showing fill insulation between the rafters in the frame type of construction

practically nothing in the heat losses calculated in the entire home. In fact, the bulletin of the Illinois Master Plumbers' Association mentioned before, listed all the various insulations in each class and took an average of the factors reported on the materials in each class. It was found that the variations between the materials was so slight that the effect upon the amount of radiation required in calculating various individual materials of each class were well within say a 2 per cent tolerance factor.

There are a few contractors no doubt who have had unfortunate experiences installing heating systems in so-called insulated homes. Without exception this experience can be traced to improper application of the insulating material or to the failure to put in the specified amount of insulating material. This condition results invariably from an evasion of recommended standards for the application of the particular material. A good example of this point is brought out here. A particular fill insulation material had been recommended. This material was to be installed to fill the entire space between the studding in the sidewalls and to a thickness of 4 in. in the second floor ceiling. In order to save on the cost of the finished home the material was reduced to a thickness of 1½ to 2 in. in sidewalls and 3 in. in ceiling. The material in the ceiling worked out very satisfactorily but the material in the sidewalls was not thick enough in the first place to give the results anticipated, and is now crumbling in the sidewalls because it does not fill the entire space.

Series of Actual Results Presented

Without question the most convincing argument that can be given for any problem is the presentation of a series of actual results accomplished by the product in use. There is no more accurate measure of these results than that taken from the operation of gas heating installations because here we have a fuel of a definitely known heat value which is being measured as it is used. It is therefore possible to determine almost to the heat unit the heating actually placed in the home in a given period of time. The examples given serve two purposes, first, that the heat losses from a home with a given insulation installed can be calculated as accurately, if not more accurately, than a home which is not insulated. Second, that the effect of the insulation on the heat loss is almost directly in proportion to the thickness of the insulating material.

A great amount of data has been collected to determine the effect of home insulation on fuel consumption and heating plant requirements. The typical types and methods of insulation and the actual results of same are indicated in the following cases:

Case 1.—Board insulation in walls and ceiling—Installed when building was built.

Case 2.—Board insulation applied in roof—Installed after building was built.

Case 3.—Board insulation on attic floor—Installed after building was built.

Case 4.—Fill insulation on attic floor—Insulation installed after building was built.

Case 5.—Fill insulation in walls and ceiling—Installed while building was being built.

The individual cases are presented in detail:

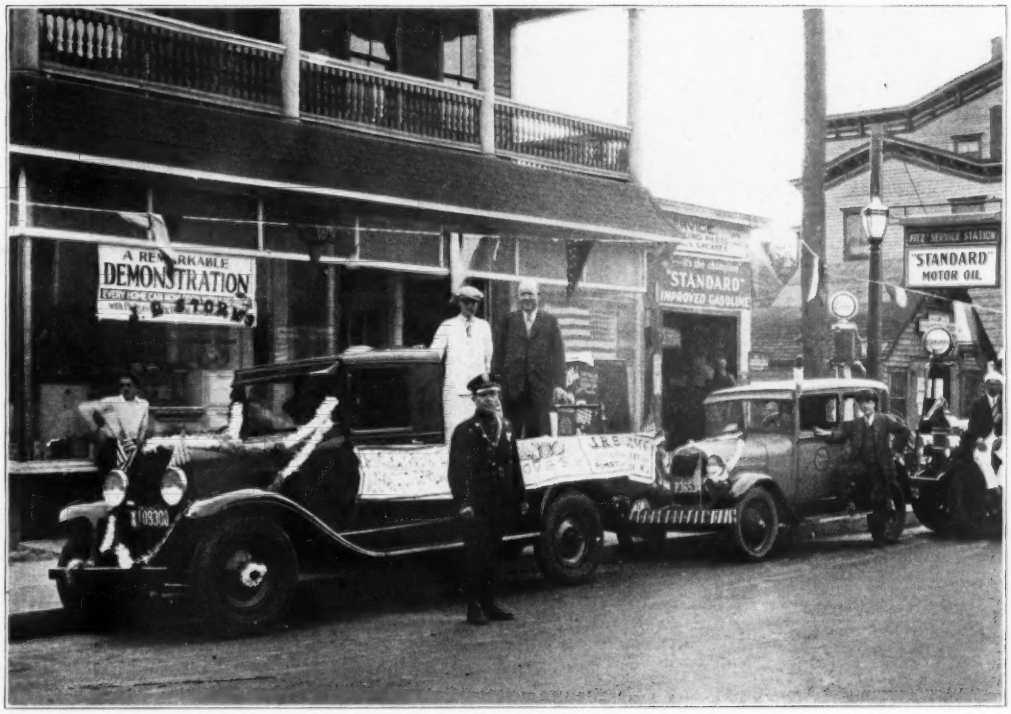
Case No. 1

Location—Fall River, Mass.

Theoretical Hot Water Radiation (uninsulated)	598	sq. ft.
Theoretical Hot Water Radiation (insulated)	430	sq. ft.
Actual installed radiation	466½	sq. ft.
Insulation—1½-in. board in walls. 2-in. board in ceiling.		
Gross cost of insulation—approximately	$500.00	
Savings—2,340 sq. ft. of lath @ 2½c sq. ft.	$58.00	
Saving by using smaller boiler	87.00	
Saving by using less radiation	53.00	
Total savings	$198.00	
Approximate net cost of insulation	$302.00	

(Continued on Page 144)

PLUMBING & HEATING MERCHANDISING



Taking the product to the public

He Sells *Five Hundred* Gas Ranges a Year —Beyond *the* Gas Mains

J. R. STORMS is a plumbing and heating contractor at 248 Wanaque avenue, Pompton Lakes, New Jersey, which contains approximately 3,000 inhabitants and nestles among the hills and lakes of the Garden State. There is no gas service in this rural territory, yet J. R. Storms sells ten gas ranges a week with the aid of two outside salesmen, store demonstrations and direct-mail. These ranges are operated with artificial gas.

"When a plumber does a business beyond the gas mains," said Mr. Storms, "his sales output is naturally curtailed, because he cannot sell the ordinary gas ranges and gas appliances; therefore, he must seek a substitute, and I have found that the ranges operated by artificial gas are excellent side-lines and give a plumber access to many homes he never would enter otherwise. Sales of these ranges frequently lead to orders for other plumbing and heating fixtures, if journeymen and salesmen are trained to keep their eyes open for subsequent sales. Housewives who are using smelly oil stoves are excellent prospects for this type gas range, and, in view of the fact that artificial gas will produce about five times more B.t.u. units than natural gas, this product can sometimes be sold to home-owners in sections that are piped for gas service. Only the other day a customer, we had sold, was so pleased with her purchase that she brought in a check for another range to be delivered to a friend thirty miles away in a city where natural gas was obtainable."

No Seasonal Slumps

"Our salesmen sell as high as twelve ranges a week and sales keep moving right along in winter and summer. There is no seasonal slump in this side-line because there is such a big field in the rural section. In the winter time, our men may find it necessary to skate to the homes of prospects residing on the lakes around here, or in the summer they may employ a motor boat to make calls, but neither rain, snow, sleet, water nor mud prevents them from bringing in sales regularly. Houses on the lake front have housewives who are ex-

cellent prospects for our gas ranges and we make sales to summer campers as well as to regular residents who have been using coal or oil stoves. The canvasser does not carry a range with him. He brings the prospect to the showroom in his car or makes an appointment to meet her in the store, where she can be given a proper demonstration with a range already hooked up. Most sales are cash, although we do sell on installments, if desired. Canvassers carry literature and photographs of the ranges with them and this is a big help in interesting prospects. Night calls are most productive of all because husband and wife are usually home then. Direct salesmen must make night calls to produce maximum results. Both husband and wife must be sold.

"Our outside men work on a salary plus commission and I find that this is the best remunerative arrangement for canvassers, because you can then have some control over them. When you pay men on straight commission only, it is not so easy to supervise their actions and they do not care to do any servicing or make good-will calls. A man working on commission usually forgets a purchaser after he makes the sale of a specialty such as this gas range, then he goes looking for the next 'kill.' You can't blame him for taking this attitude but it is harmful to the retailer. We insist that our outside man make two or three back calls after a range is installed to make sure that everything is Okey and of course, this also gives them an opportunity to sell a heater or some plumbing fixtures to replace old ones.

Following Up Sales

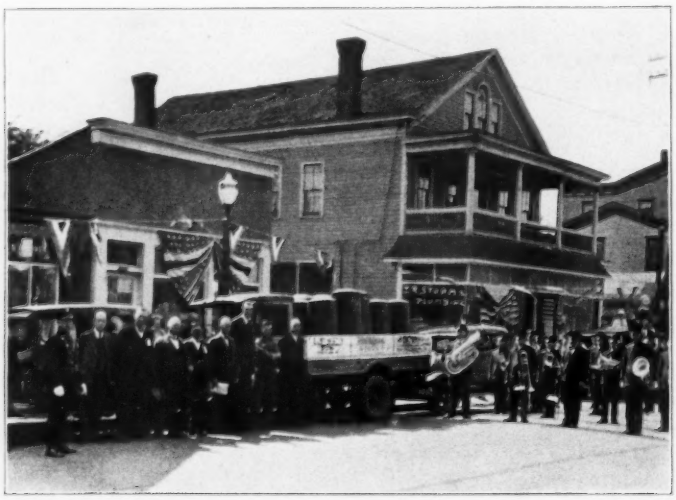
These call-backs make customers understand we can give a type of service that mail-order houses cannot render and service is a big thing today, particularly with equipment of high unit value. We feature service in our sales talks on gas ranges and when we show a disposition to give service even when we are called by a not recent purchaser, it builds confidence in our establishment. Last winter, we sold a woman—a Mrs. Burridge—and after the range was hooked up, the salesman made three or more call-backs to see that everything was Okey. She was so pleased that she sold the neighbor on each side of her, and later we got a third neighbor on the lake. Her neighbors had refused to buy when canvassed by our men because they feared repair bills and thought that they would not get efficient servicing. They figured that no dealer would brave the lakeland ice and snow to service a range once it was sold, but when we made three unsolicited calls on a purchaser in their neighborhood, they bought without hesitation. Thus it can be seen that good servicing of appliances leads to additional sales. Of course, the manufacturer of these ranges supplies the gas re-fills when needed and an employe of the company reads the meter once a month, after which a bill is mailed the customer for gas, just the same as a utility corporation sends out a bill for natural gas drawn from its pipes.

"Cooking demonstrations are big sales-pullers in connection with this gas range. The manufacturer supplies the culinary expert who stands in the show window, baking pies, cakes and bread. Even though this is a small town, we have hundreds of people watching such demonstrations whenever we run them. The demonstrator does little stunts to attract attention, such as baking a cake with the gas oven door open and then baking one with the door closed. It takes four minutes longer to make a cake with the door open on our range. He also hangs up a water kettle about fifteen inches over the flame and heats the water in a very short time, much quicker than it could be heated with natural gas. We give away pastry and bread and other baked edibles, just samples for on-lookers to try. We butter the bread and we'll even toast it for them if they express a desire for toast.

The Way to a Prospect's Heart

There is nothing like a piece of buttered home-made bread or a light fluffy cake to overcome sales resistance in man or woman when it comes to the presentation of one of our gas ranges. Many housewives are sold after tasting the baked products coming out of a show window displayed range. Sometimes a man will bring his wife down to look at one after he has eaten a piece of buttered toast we gave him and more than once, the male of the species has bought a range as a present for his wife after tasting the pies it baked."

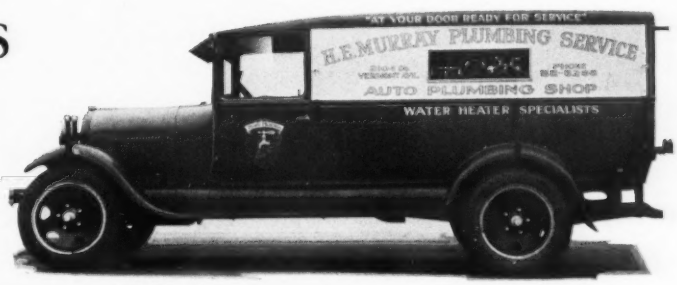
All prospects called on by the outside salesmen are followed up with direct-mail matter.



How this contractor demonstrates his gas range for use beyond the city gas mains

Southern California Contractor Sells Water Heaters

By F. L. LOOMIS



One of the trucks described in this article

At a conference of officers of associations of merchant plumbers of Southern California one of the delegates asked if any of them controlled the sale and installation of water heaters in their respective communities. Chairman Claude Hickman, who presided at the conference, answered for all, to the effect that with the exception of one or two localities throughout Southern California the water heater business was a very important and profitable part of the merchant plumber's volume.

During the last few years the business of selling and installing water heaters has grown to enormous proportions in Southern California and probably only a small percentage of the hundreds of merchant plumbers within this territory is without interest in this department of the plumbing industry. Since this is the case the matter of merchandising water heaters presents an interesting subject. Perhaps in no other department of the plumbing business does the individuality and personality of the merchant plumber bulk so large as a determining factor in salesmanship as in the merchandising of water heaters. It may be fairly said that in the merchandising of water heaters every merchant plumber is a law unto himself, with none other exactly copying or paralleling his peculiar methods. For this reason no hard and fast rules can be laid down as to the best and most efficacious methods to employ in merchandising water heaters, but there remains the opportunity to detail what some of the more successful purveyors of water heaters have done to stimulate or build up their sales and to relate as nearly as it is possible to relate such an elusive thing as salesmanship in its particular relationship to the disposition of water heaters.

It is well illustrated by taking the case of L. M. Hamm, 1836 West Main street, Alhambra, Calif. The plumbing institution of L. M. Hamm is essentially a one-man institution. This does not mean exactly that L. M. Hamm does all the work, but he operates on the elastic principle of fitting his force to the exigencies of the occasion, augmenting it by hiring journeymen whenever he finds it necessary, and by devoting himself to the work whenever the volume slackens to the point where extra help would be superfluous.

Small Firm Is Merchandiser

This shop is located on one of the principal streets of Alhambra, a growing suburb of Los Angeles, and Mr. Hamm conducts it along up-to-the-minute merchandising methods. For instance he pays meticulous attention to his window display. This is indicated by the illustration of his place of business which appears herewith. These window displays are changed periodically and an effort is made to have the particular display at any time correspond to the season of the year or to be illustrative of some particular sales drive the institution is putting on.

His service truck, also shown in the illustration, is kept in the pink of condition and advertises the business conspicuously upon its side panels. Attention is called to two legends upon this truck: "A complete repair service at your door" and "Water heaters and other installations on the monthly payment plan."

Although having been in business since 1905, Mr. Hamm's attention hardly was attracted to water heaters until a little more than two years ago. At that time he was induced to take the agency for one of the well known heaters on the market and this agency he still maintains exclusively. At the time he took this on he had no prospect list at all. Merely he had convinced himself from his own observation that there was a potential market for water heaters in his community and he could see no reason why he should not realize upon it. He commenced the building of a prospect list by observing where water heaters might or should be installed, confining these observations to his own calls. Within the two years he has been consciously trying to sell water heaters, he has sold and installed approximately two hundred and fifty and has a prospect list of workable proportions more numerous than the two hundred and fifty already sold.

Once Mr. Hamm has observed a possibility of future installation for a water heater he immediately adds it

Another truck that helps sell water heaters

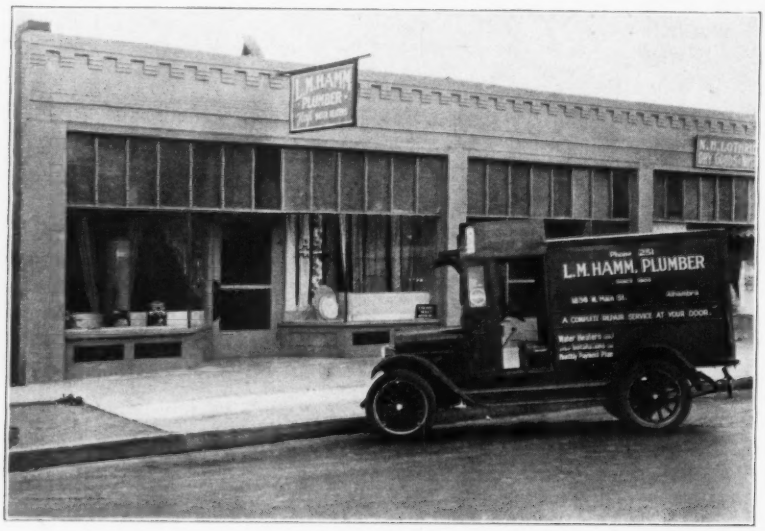
to his prospect list and every month the prospect gets some water heater literature. Also he maintains a display of water heaters in his salesroom and stands ready at any and all times to explain and demonstrate. Furthermore, he stands upon the reputation he has gained during the years he has been in business to substantiate his claim that whenever he does any job, from repairing a faucet to installing a fixture, it is well and satisfactorily done.

vertisements he can devise. Operating as he does throughout the entire extent of Los Angeles, he lets his trucks proclaim his business and then relies upon the celerity and quality of his work to maintain his reputation as a reliable plumber.

In addition to his showroom and his trucks, Mr. Stone advertises in the telephone book and by circular letters and special literature. He says, however, that his satisfied customers are his best advertisement

Heater Sales from Repairs

How generally the merchant plumber is taking cognizance of the water heater business and how generally it is being advertised on service trucks, is illustrated not only upon the trucks of the firms mentioned, but also is illustrated on the service trucks of H. E. Murray, 2104 South Vermont avenue, Los Angeles. Mr. Murray operates two of these trucks to take care of growing repair and maintenance business, and while this



This contractor has developed a nice water heater business

Mr. Hamm's example is an ideal one of what individuality and personality can do in making of a special thing such as water heaters an item of major importance in his annual volume of business.

Appearance Pays

Another case in point is afforded by that of C. H. Stone, the "Wilshire District Plumber," 992 South Western avenue, Los Angeles. Mr. Stone's business, which is one of the most profitable in Los Angeles, is confined almost entirely to maintenance and repair. He runs six trucks, like the one shown in the illustration, and keeps them all busy all of the time. The conspicuous feature of Mr. Stone's business equipment is the neatness of it both inside and out, meaning by that the appearance of his trucks upon the street and the appearance of his display in the inside of his salesroom. An illustration of one side of this attractive salesroom is shown herewith.

He says that this neatness is an essential factor in the conduct of his business and is one of the best ad-

and that word of mouth recommendation gets him more business than any other means of advertising.

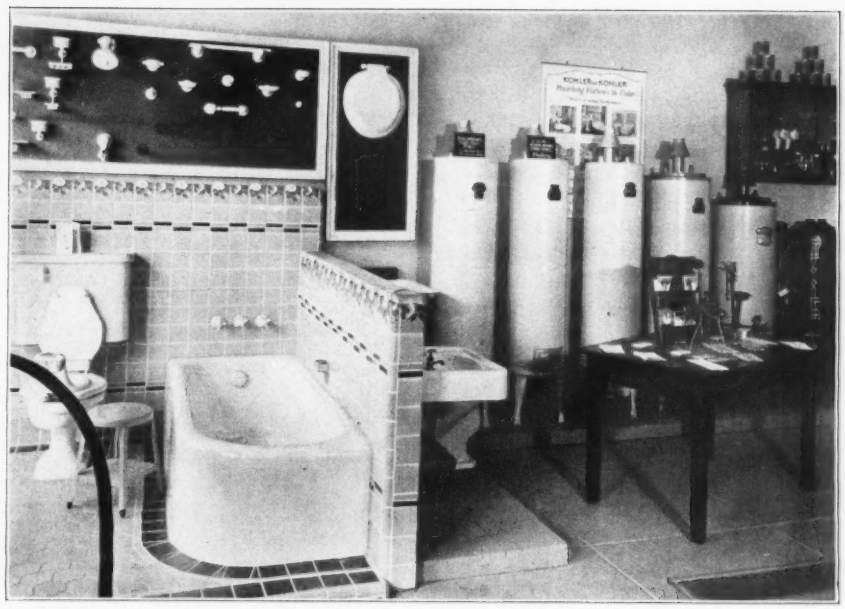
Upon his trucks and in his display he lays emphasis upon a particular line of water heaters, although he does not rely upon this one line exclusively. He maintains a prospect list upon which he sends out literature occasionally, this list having been compiled largely from the experience of his men in making calls. He does not rely upon his men selling, but every man must report likely prospects to the office whereupon the names are at once added to the prospect list.

While not amounting to as large a proportion of the total business done by C. H. Stone as is the water heating business done by L. M. Hamm of his total, still it is nevertheless a very respectable factor in making up the annual volume and serves to keep the profit account in healthy condition.

still is a small proportion of his total volume, the bulk still being on the contract basis, these two trucks are admirably outfitted for the main purpose they serve.

The accompanying illustration shows the exterior of one of these service trucks. Truly is the legend on the exterior of the truck justified by the outfitting of its interior—it always is "At your door ready for service."

To the man who is engaged in plumbing jobbing work the completeness and convenience of the interior arrangement of these service trucks will be at once apparent without a detailed description. With the bins, boxes, drawers and pigeon holes stocked, as they always are; with the vise, the wrenches, the pipe cutters, the ladder and all other appliances and tools needed for plumbing repair work, this truck is a veritable moving plumbing shop. It is worthy of notice that room has been left below the line of boxes and drawers so that if it is necessary to load a bath tub, a lavatory bowl or a water heater into the truck, it can be accommodated



A Southern California water heater display

without disturbing or discommoding anything essential for the work in hand. Also it is worthy of note that the back bumper of the truck serves also as a step upon which to stand or to facilitate getting in or out of the truck.

Mr. Murray disclaims any credit for being a merchandiser of water heaters, yet he says this department of his business is growing in importance, and he attributes not a little of this growth to the fact that his trucks carry the statement that the Murray concern is "Water Heater Specialists," and are always ready to install a heater instantly.

Examples such as the above might be multiplied indefinitely throughout Southern California, and indicate how nearly Claud Hickman's statement, quoted above, to the effect that generally speaking the merchant plumbers in Southern California were in control of the water heating business in their respective localities, is correct. The examples cited merely are typical of what is being done in this direction in Southern California and if any conclusion is to be drawn from them it is that neatness of appearance in both service trucks and display rooms, coupled with conservative and consistent advertising and prompt and satisfactory work are essential factors in the proper merchandising of water heaters.

February Window Backgrounds*

Washington's birthday calls for patriotic window displays. The type of display for this holiday differs slightly from other patriotic decorations, in that it is a little more quiet and dignified. Tribute is being paid to a great man—the window is to be in keeping with the occasion.

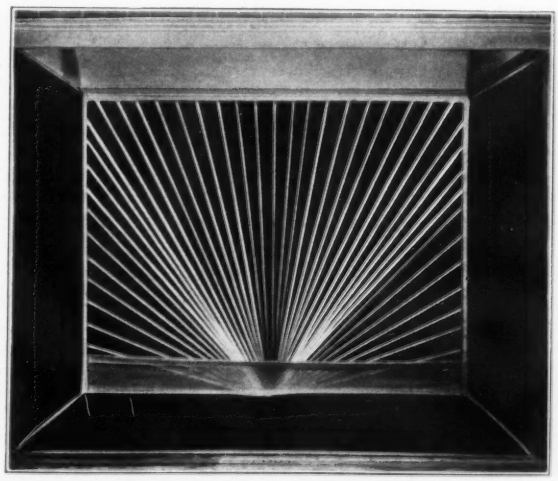
Red, white and blue are logically the colors with which to work, and many interesting arrangements of these tricolors are possible. Care should be taken that all three are true colors.

In display No. 1 a display treatment has been adapted which is always good—the sunburst. In full colors, the clear brilliant hues of crepe paper give a beautiful sweep of color. Both the blue in the center, and the red on the sides graduate in color strength to the white.

In display No. 2, a great deal of space is covered effectively with very little crepe. The eagle in the center panel is cut from a decorated crepe design, and the corner drapes are pulled to a semi-circle formation on the floor. This semi-circle formation is the unusual feature of this display. It is easily made by drawing the half-circles on the floor, and then taking the base of the drapes along the lines before stretching.

Directions are given here for the easy installation of the two windows:

Window No. 1



Window No. 1

DENNISON CREPE REQUIRED:

3 folds No. 52 National blue.
1 fold No. 55 Bluebird.
1 fold No. 57 Delft blue.
2 folds No. 11 white.
1 fold No. 83 Ruby.
1 fold No. 84 Flame.
1 fold No. 81 Red.

INSTRUCTIONS FOR INSTALLATION:

STEP 1. Install the tubes on the window background. Starting in the center, tack three or more tubes each of No. 52 National blue, No. 55 Bluebird, No. 57 Delft blue, and 6 or more No. 11.

* Material required may be bought at your local Dennison dealer's.

white; then three or more tubes each of No. 83 Ruby, No. 84 Flame, and No. 81 Red. The latter comes nearest the base of the window. Be sure to distribute the tubes evenly on the background.

STEP 2. Outline the margins of the window background with tubes of No. 84 Flame, and tack rosettes in the corners of No. 11 white.

STEP 3. Cover the base of the window with No. 52 National blue. Outline the margins of the base with tubes of No. 84 Flame, and tack rosettes in the corners of the same.

Window No. 2

DENNISON CREPE REQUIRED:

3 folds No. 52 National blue.
2 folds No. 11 White.
2 folds No. 84 Flame.
1 fold Decorated crepe No. P558.

INSTRUCTIONS FOR INSTALLATION:

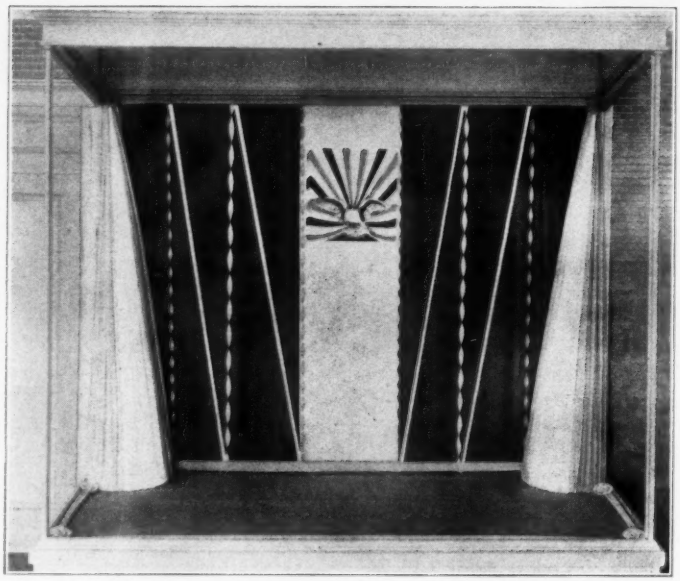
STEP 1. In the center of the window background, install a 15-inch panel of No. 11 white. Over this, and just above the center of the window, install a strip of the Decorated crepe, cut from a fold of No. P558. The center panel is edged on the left with a twisted streamer of No. 52 National blue, and on the right with a twisted streamer of No. 84 Flame.

STEP 2. Tack the diagonal tubes in place on the window background. These are all of No. 11 white. The twisted streamers reading from the left hand side of the window over, are of No. 84 Flame, No. 11 white, No. 84 Flame, No. 11 white, and No. 52 National blue.

STEP 3. Outline the margins of the window background of the window with tubes of No. 84 Flame, and tack rosettes in the corners of the same.

STEP 4. Cover the base of the window with No. 52 National blue. Install the drapes which are tacked on either side of the window base in the corners. These are of No. 84 Flame, No. 11 white, and No. 52 National blue, converging at the top of the window in the upper corners.

STEP 5. Outline the margins of the base with tubes of No. 84 Flame, and tack rosettes in the corners of the same. The edge of the crepe on the base next to the glass is ruffled with the fingers before it is installed in the window.



Window No. 2

The Master Salesman

Analyzes a sale in competition with a mail order house

Since the expansion of mail order houses recently, their establishment of stores everywhere displaying bath rooms and a complete line of plumbing fixtures, there has been considerable discussion, pro and con, of the presumed intrusion of this class of merchants on the heretofore accepted exclusive plumbing industry. A great deal depends on the attitude of the contractor. "I'll take 'em on as competitors as often as I get a chance," says one. Here is a story in his own words:

"Sitting in the association meeting one night, it developed that two of our boys were bidding on a job, a single house; and so was the local mail order house. It seemed that the owner had about decided to let the mail order house furnish the material. It was also understood they would find him the labor to make the installation; this, as an outside contract, however, in which they had no interest. I thought I saw an attractive feature in that last concession and I raised the question of why we should not make that installation if we could get our profit out of the job. That just naturally brought a storm of protest about my ears in one minute of time.

"But, I reasoned, isn't it better to let the mail order house take the material end of it if there is no profit in it for us; and if there is a good profit in the installation, why let some one else get the job? If we don't find a way to stay in the picture and make it our business to get there, aren't we just making it easier for this kind of competition. To just let this kind of business take its course, will break down all we have built.

"Well, nobody agreed with me, but during the discussion I asked if they objected to me trying to prove my case by bidding on the job for all of it or just the labor. They agreed that it was an opportunity to test my theories so I got the name and address of the prospect. The next day I called on him, introduced myself and explained the purpose of my call.

"'Mr. Harris,'" I began, 'I am informed you are about to build a home and I called to see if I could offer my services as sanitary plumbing and heating engineer.'

"'Why, come in,' he replied. 'I suppose you would like to give me a figure on the plumbing and heating.'

"'Yes,' I replied, 'I would like to look over your plans for that purpose.'

"'Well,' he said, 'I don't know

whether or not you would want the contract when I tell you the conditions. You see, I am buying my fixtures and material from the Right Price Company which has given me a very low cost, and two plumbers in town here have been so much higher that I had finally decided to have those people get me a plumber who would take just the labor contract.'

" 'I have no objection to taking the contract for installation and you buying the material,' I replied. 'Of course, you are responsible for the quality of that material, you know.'

" 'Of course, I realize that,' was his answer.

"With this understanding I took the plans home with me and figured the labor for him. I studied the specifications as he had them written, checked everything with the list furnished by the mail order house as represented to complete the job.

"Any master plumber knows that no job can be figured complete without extras caused through shortage, breakage and damage, or changes in layout caused by variations in actual construction. A joist coming at a point where it interferes with a riser or a branch, might mean more or less pipe or other fittings than those specified. Many obstacles arise on any job that require altering plan details. There was no special branded make of fixture specified, nor did the list furnished specify first quality grade 'A' fixtures. No particular specification for the brass trimmings, bibbs, traps, etc. It just gave the list of fixtures, pieces of pipe, cut to length, and everything numbered to fit a chart which accompanied the list.

"I figured three estimates. One to furnish the labor for a contract price, under which I would install all material but accept no responsibility for missing fixtures, parts or fittings or for the condition of the material as to damage until installed. Any fixtures or material necessary to be replaced through damage or error in plans or measurements, were to be furnished by me at the standard list prices. Another I figured on a cost plus 15 per cent basis, and the third was figured on entirely new specifications and included material and labor to complete the job. In the last estimate I used fixtures and material of grade 'A' quality, fitting the character of house he proposed building.

"Several days later I called on him and showed the first and second estimates; he immediately figured the cost of my first estimate and his material costs. To my surprise I was not very much out of the way in price. Then he read it over, saw the exceptions I had noted in it, and began to question; and there was where I got in my good work—salesmanship, you might call it. There were several points in the plans that made it apparent to him when explained that they would not tie in without changes in fittings and pipe lengths which would necessitate replacement by other material of proper sizes. That first exception to 'cut-to-order' plumbing was the beginning of a long session on the subject.

"Then, keeping my third estimate in my pocket, I suggested that he and I go and see this line of plumbing fixtures which were on display at the local store of this mail order house. He seemed to have begun to place confidence in me by this time and readily assented. I had my car there, and as he stepped into it, I suggested that, since we had to pass my place, we stop in there on the way down and look at my display rooms; they might give him some ideas. To this he agreed also.

"When we arrived at my store we stopped and looked in the windows where a colored built-in tub was displayed among several other fixtures. He made a few complimentary remarks and then we went inside. Here I began showing him better fixtures than those I knew he had selected from the catalog, but not in the class of those I had estimated to furnish.

"After several comments of a general character, he turned and asked me what I could install those fixtures for. I told him I would not recommend them as a choice for his home, but (leading him to a pedestal basin) rather thought this value most fitting for his home.

" 'But they would cost more money, wouldn't they?' he asked.

" 'More than you can buy cheap fixtures of the mail order house,' I replied, 'but suppose we just look around for ideas and then we'll go down there and see what we can work out to your best advantage.' And so we lingered in my show rooms for an hour.

"We went directly to the plumbing department of the mail order house, and there isn't much more to tell about the conclusion of the trip. The difference in the material as to quality, finish and the appearance of the fittings (which were nickel plated, while I had shown him chromium plated) was such that he did all the selling for me. He compared this and criticized that, always using my display as a model for his ideas. The salesman then really turned the trick for me. He wanted to show him some cuts of other styles in a catalogue.

"Mr. Harris turned on him and said, 'Yes, that's what I almost bought, beautiful pictures of fixtures.' As we got in my car he turned to me and said, 'Let's go back to your store and talk this over.'

"When we got back we went over all the fixtures again which gave me the opportunity to show him the kind of brass and fittings I would recommend. Finally, he asked me for a figure. There was where I had to think fast. Was that the psychological time to show him my third estimate? If I did, wouldn't it look as though the entire affair had been framed? I decided it would. Kept the bid in my pocket and told him I'd bring it to him that evening and if he was satisfied we could sign the contract and get it settled. He agreed to this and after dinner that night I called on him.

"Naturally, price was discussed, but by him only. I let him do the talking, answered his questions and when he was empty of further questions, I began by making a verbal picture of my material, letting him compare values. Then I got out his old figures and my estimate for labor and adding the two together, pointed out that there was no guarantee that their list would complete the job. Then producing my third estimate, I showed him I was only 12 per cent higher and guaranteed completion of the job.

"' All right,' he said, 'did you bring a contract?'

"I replied that I had and it was signed up in the next minute. The job is finished and that is one house owner who speaks well of plumbers and hasn't much good to say of anyone who goes anywhere but to a plumber for plumbing material. Incidentally I have a set of fixtures in my showroom that were purchased of the mail order house. It saves time, having them there, for sale or com-

parison, as the prospective customer wishes."

Analysis by the Master Salesman

We are glad to have this subject brought to us. It has been much discussed in plumbing circles and not infrequently resentment has been expressed toward the intrusion of so-called unethical competition. The recital of the foregoing experience is an excellent portrayal of what I mean when I say it depends on the contractor's attitude. Our correspondent in this case is one who sees sales opportunity in such competition.

First he brought out in that meeting that if a licensed master plumber didn't do that work, some inefficient mechanic would. If the job were poorly done, the plumbing trade would get the blame for it anyway. His arguments are sound. It is impossible to keep any sort of competition under control by trying to eliminate it. Study it, out-point it; in this case, as a master plumber, he felt better qualified to sell himself and ability to his prospect.

When he reached the prospect, again he kept the door of his mind wide open when told that the mail order house would furnish the material. He quickly grasped the opening to "get in" when the customer made it possible for him to accept or decline the contract to do the installing. Not that he intended going after that part of it. The apparent willingness to furnish only his knowledge and the labor was just another opportunity to get along further with his prospect.

After he returned to his home he sat down to study the plans and list of material. Here again he planned more profit for himself in planning that he would provide the extras or replacements of damaged material at regular list prices and the labor contract on a flat rate basis. Then he figured the labor at cost plus 15 per cent. In the first of these he had his club to wield. If the price question came up he was ready to show how he must estimate against all contingencies and would introduce his "cost plus bid" as the proper basis for the owner.

His third estimate for material and labor showed his real plan of action. All through his entire campaign he had been really working to outpoint the mail order house and sell the customer the material himself. Study his progress closely and note the finesse with which he worked up to the point of exhibiting his line of fixtures; and how he did it.

He apparently had somewhat of a surprise when he learned that his flat price for labor was not so much out of line. But he didn't want the labor contract only. He started to work breaking down the plans, using the customer's questions about the exceptions he had noted, as his opening to his objective, by showing how a slight change here and there (necessary because of certain obstacles in the layout of the building) would not permit the use of "cut to order" pipe and fittings, and meant more expense in extras before the work was finished. Of course he had to figure all of that as a part of his contract. So far he was safe.

His next move was to get his customer down to his store to see his fixtures. Cleverly, he proposed that he, as the master plumber, ought to see what the mail order house intended to furnish under this list. Personality, frankness and "square deal" talk had won the confidence of the customer so far that he did not hesitate to agree that they should look over those fixtures. Our master plumber, driving his own car, naturally found it easy to gain further acquiescence to looking in on his show room on the way down. Note from here, how the game was played, one move at a time.

He stopped his customer outside long enough to let his eyes feast on a beautiful colored bathroom in his window display. He knew the customer couldn't afford a bathroom like that, but he wanted him to form his own opinion of the kind of master plumber he was employing to do this work. Then, when inside, the customer saw first, the better class of cheap fixtures, better than the catalog fixtures, but not the kind he should and could afford to have. In this our Master Plumber showed great tact. A very expensive outfit from the outside, then competitive fixtures inside. When he began asking for costs, he had another surprise when told by the master plumber that he would not recommend them, but rather show the better quality and style actually selected, as his choice for the customer's home. With the customer more than half-sold, he carefully held his impatience under control and suggested that they go on to the mail order house and, out of the whole picture, see what would be best to decide on. Of course, there is no doubt now, of what the result will be. The mail order display will clinch the sale for our master plumber since he has been careful to create the preference for him and his line before they left his store.

Arriving in the plumbing department of the mail order house the effect of all these carefully planned preliminaries was quickly apparent. The customer was critical with the salesman, finding fault with one thing, then another, repeatedly referring to fixtures in the master plumber's show room. All this was ammunition for the master plumber. Merely playing with a nickel plated basin cock reminded the customer that he could have chromium plated in what he saw in the plumber's show room. Then the salesman weakened and lost. He offered to show pictures of other fixtures. This admission of failure to please on his part seemed the deciding influence in the customer's mind and he wasted few words in expressing himself.

It may have been taking a bit of a chance to defer closing the contract until that evening. That is a matter of judgment for the salesman plumber at the time the question presents itself. In this case, however, our master plumber was evidently right in showing no concern about the contract, since he closed it that night.

The sales moral in this experience is self-evident. No sale is lost until real sales effort has been applied in many ways. There is always a weak spot somewhere if we have the intuitive keenness of "sales sense" to find it. Most of us quit too soon, or are in too great a hurry to reach our objective and so forget the road over which we must travel is to be built first.

This Master Plumber has given us a good example of headwork and planning. Instead of unethical competition, the mail order house to him was opportunity for good competition for him. But he knew he had to find the way first, then how to apply it; after that he could work confidently to the attainment of his goal. His attitude is the only right one in facing this competition.

Fig. 1.—Typical forms of bacteria: A.—Bacilli; B.—Cocci; C.—Spirilla. This is as they appear under the microscope. The bacteria shown in the lower part of A are enlargements of what is seen through the ordinary microscope

Something About Bacteria

By W. A. HARDENBERGH

BACTERIA, though exceedingly small organisms, far too small to be seen without the aid of a powerful microscope, have an important influence on the life and welfare of man. They may cause his death through the agency of infectious diseases; they are factors in spoiling some foods, and in making others fit to eat; they aid in the process of decay and disintegration through which dead organic matter is reduced to its original elements. Instances of these various activities of bacteria are found in such diseases as typhoid fever, diphtheria and tuberculosis; in the spoiling of meats and the souring of milk; in the making of cheese, vinegar, sourkrout and other foods; and in the decomposition of dead bodies, the rotting of apples, and the treatment of sewage.

Thus it will be seen that bacteria are everywhere, and that they have important characteristics which require study, so that their ill effects may be avoided and their beneficial properties put to use. Bacteria are nearly midway in classification between the plants and animals, having some properties of both kingdoms, but generally they are classed with the plants. Their length is measured in microns, since ordinary measurements of length are too large. A micron is about 1/25,000 of an inch. The smallest bacteria that can be seen through ordinary laboratory microscopes are about ½ of a micron long; the average length of the common types of bacteria is 1 micron or a little more.

Classification of Bacteria

Just as they vary in length, bacteria vary also in shape and appearance, and they are classified in accordance with these characteristics: Round bacteria are called cocci; rod-shaped bacteria are called bacilli; and those shaped like a cork-screw are spirilla. There are also classifications based on whether bacteria are able to produce disease (pathogenic) or not (non-pathogenic); on whether they live on or in some other organism (parasitic) or exist independently of a living body (saprophytic); and on their mode of living, as being able to live and multiply only in the presence of oxygen (aerobic); being able to thrive only in the absence of oxygen (anaerobic); or being able to adjust themselves to either condition (facultative).

The sanitarian is, of course, interested in the pathogenic, or disease bearing, bacteria, and especially in those which are spread through the agencies of improper waste disposal, as lack of sewerage facilities, or careless or inadequate treatment of the sewage itself. These diseases include typhoid fever, paratyphoid, dysentery and colitis. The bacteria causing these diseases are all parasitic bacteria.

The sanitarian is also interested in those bacteria which aid in the reduction and treatment of sewage. These bacteria are of the saprophytic type, and of themselves are harmless. But sewage, which contains such types of bacteria in vast numbers, may contain also large numbers of bacteria which are dangerous to health. All sewage must, therefore, be classed as dangerous to health, though it contains the bacteria which can be used to bring it back again to a safe, odorless and unobjectionable condition.

What the Master Plumber Should Know About Bacteria

What the master plumber, the sanitarian, the sanitary engineer, or anyone else concerned with the treatment and safe disposal of sewage want to know is how best to employ these bacteria to accomplish this end. To do

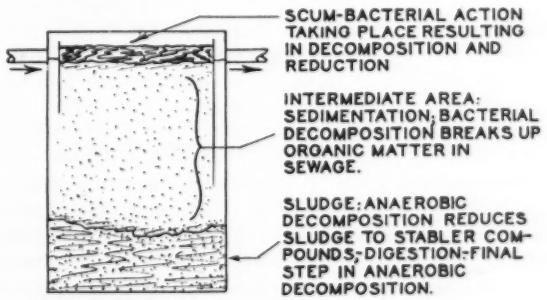

SCUM-BACTERIAL ACTION TAKING PLACE RESULTING IN DECOMPOSITION AND REDUCTION
INTERMEDIATE AREA: SEDIMENTATION; BACTERIAL DECOMPOSITION BREAKS UP ORGANIC MATTER IN SEWAGE.
SLUDGE: ANAEROBIC DECOMPOSITION REDUCES SLUDGE TO STABLER COMPOUNDS; DIGESTION-FINAL STEP IN ANAEROBIC DECOMPOSITION.

Fig. 2.—Diagram of what goes on in a septic tank

this, it is mainly necessary to understand the conditions under which bacteria work best, so that the most favorable environment can be provided for them.

An important factor in the activity and life of bacteria is temperature. Below a temperature of about 45 degrees F., bacteria are not active; most bacteria perish

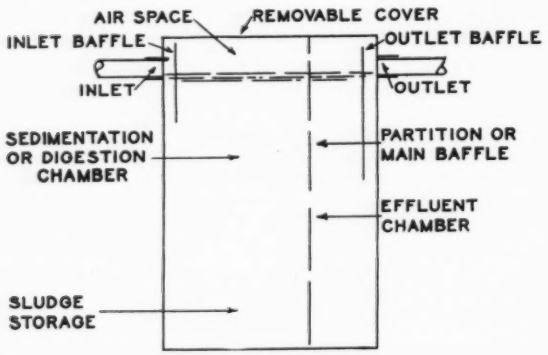


Fig. 3.—Important features which should be incorporated in one way or another in a septic tank for residential use

when the temperature exceeds 130 or 140 degrees. Fahr. Everyone knows that food keeps best at low temperatures. The reason is that the bacteria present are prevented by the low temperature from multiplying and growing to such an extent as to spoil the food. Likewise, sterilization of food by boiling or other means and subsequent sealing in an air-tight can, results in indefinite protection against spoiling, because the decomposing bacteria (and all others as well) are killed by boiling. A strong sugar or salt solution prevents the growth of most kinds of bacteria, so that foods pickled in salt brine or packed in sirup will keep indefinitely.

Most bacteria live and multiply best in a temperature around 80 degrees Fahr. or 100 degrees Fahr.

Primary and Secondary Sewage Treatment

Sewage treatment, it may be said, consists of two steps or processes. Primary treatment is the breaking down process in which the complex compounds in the sewage are decomposed. This process of decomposition is generally accomplished through the agency of anaerobic (without air) bacteria, which reduce the matter contained in the sewage to simpler forms of chemical combinations which can, through further treatment be changed into substances which are relatively stable and unobjectionable. The processes of primary treatment are accompanied frequently with the production of odor and the formation of gas.

Secondary treatment is the reverse of primary treatment in that oxygen is put back into the broken down products of the primary process. This is accomplished through the agency of aerobic (with air) bacteria, and the process is known as oxidation.

Primary Treatment in Septic Tanks

Primary treatment or decomposition takes place in septic tanks. It is aided by the settling or sedimentation process which also goes on in the tank. In city sewerage systems, which often are many miles in length, decomposition may begin even before the sewage reaches the treatment plant. When this occurs, the sewage is stale, or septic, and in appearance is black or dark, with a strong odor.

In residential or institutional plants, where the sewage flows only a short distance, it reaches the plant fresh, in which condition it is easier to treat.

As the sewage passes slowly through the septic tank, much of the solid matter in it either rises to the top as scum or settles to the bottom as sludge. Bacteria are active in both places, and also in the sewage flowing through the tank, which, in addition to sedimentation with the removal of the grosser substances, is undergoing a process of anaerobic (without air) decomposition, or primary treatment.

It will thus be seen that no septic tank ever accomplishes complete treatment of sewage. Only the first stage—primary treatment—is possible in the tank, with some clarification accomplished through settlement and bacterial decomposition. Further treatment is necessary to bring the sewage to a stage where it will not further decompose with the production of odors.

In larger treatment plants, the septic tanks are of such size as to provide 4 to 8 hours detention for sedimentation and bacterial action. In smaller plants, where the volume of flow varies materially, and is more uncertain, a greater detention period is provided, and some additional extra space provided also for sludge storage. Thus for residential plants, it is customary to provide capacity sufficient to provide for the estimated flow for a period of 18 to 24 hours. The tank should be so designed as to prevent short-circuiting, or direct flow from inlet to outlet, before the sewage has undergone sedimentation and adequate bacterial action.

Field Construction of Tanks Undesirable; Increased Capacity Needed with Wasteful Use of Water

It will be seen that the provisions for bacterial action in the primary stages of treatment are simple, and that

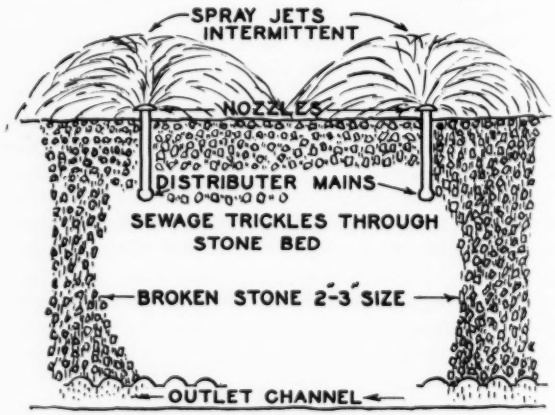


Fig. 4.—Cross-section view of the action of a trickling or sprinkling filter

a properly designed tank of adequate capacity is about all that is needed. Of course, where there are excessive flows due to leaky plumbing or wasteful use of water, extra tank capacity must be provided; and the tank also must have certain physical qualities, such as adequate depth, properly designed inlets and outlets, and proper shape or section. All these factors are available in the better grades of commercial septic tanks, and except

under extraordinary conditions it is undesirable to attempt the field construction of small tanks.

Sprinkling or Trickling Filter

Secondary treatment presents much greater difficulties, which is a reason for it being slighted in most installations. The action of the aerobic bacteria in secondary treatment is best illustrated by reference to Fig. 4, which shows a section of a sprinkling or trickling filter, a type much used in large sewage treatment plants for accomplishing a degree of oxidation. The sewage clarified and partially treated by passage through septic or other tanks, with the resulting primary treatment processes, is sprayed into the air through small nozzles provided for that purpose, and, falling on the bed of broken stone, trickles downward. After the stone bed has been in use for a time, a slimy film forms on the surface of the stone particles in which aerobic bacteria exist. As the sewage trickles over this film, the aerobic (with air) bacteria act on it, oxidizing it, and making it more stable. The application of the sewage to the bed is intermittent, so that the bacteria are given alternate periods of rest and work.

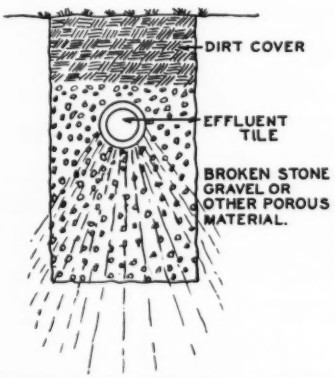


Fig. 5.—Paths followed by effluent in passage through tile disposal field and seepage into ground. Secondary bacterial action takes place in the disposal field and its proper design is of great importance

This same action takes place in sand filter beds, which are sometimes used for final treatment, but here there is also a straining action due to the fineness of the sand particles. The same action also takes place in a properly constructed subsurface disposal field, the effluent from the septic tank trickling through the stone bed and leaching into the soil, as shown in Fig. 5.

The progress of decomposition and oxidation may be traced chemically, as the sewage passes through the various treatment phases. The first distinct step in the breaking down process results in the formation of free ammonia. When the first steps in oxidation have taken place, the ammonia is changed by the addition of oxygen to nitrites, and when complete oxidation has been accomplished, these become nitrates. The ultimate aim in sewage treatment, as shown by chemistry, is the complete oxidation of all organic matter, which is indicated by the extent of the demand for oxygen. When the oxygen demand of a sewage effluent is satisfied, secondary treatment has been accomplished.

Discharging Sewage Into Streams

When raw or partially treated sewage is discharged into a stream, the decomposing sewage, requiring oxygen, takes it from the water. If the water does not have a sufficient amount, nuisance occurs, conditions stimulating those in the interior of a septic tank. Thus before sewage is turned into a stream it should be treated to such an extent that its demand for oxygen is not in excess of what the stream can furnish without nuisance. When the flow of sewage is small and the volume of the stream large, no treatment at all may be needed.

Untreated sewage nearly always contains dangerous bacteria, however. Even sewage which has passed through both primary and secondary processes of treatment may contain bacteria capable of spreading typhoid fever or other diseases. Passage through a septic tank does not destroy all the bacteria; in fact, when the conditions are favorable, which should always be the case, the gross number of bacteria may increase. Secondary treatment, or oxidation, reduces materially the number of bacteria, but does not necessarily eliminate the dangerous ones. Therefore, even though the treatment of the sewage has been complete and satisfactory, and the danger of nuisance has been removed, the sewage effluent may, and probably does, contain very large numbers of bacteria.

Ordinarily it is not necessary to remove these. If sufficient secondary treatment has been provided to prevent nuisance, the effluent may be turned into a stream not used for water supply or for other purposes where the disease bearing bacteria might injure health. Bacterial contamination of streams is not rare; in fact, it is the exception rather than the rule to find streams even relatively free from bacteria, except in the most remote and unsettled areas.

It will be seen that bacteria are the main agencies through which sewage treatment is accomplished, but that in reality they accomplish their task by chemical means. The highly complex chemical compounds which are found in raw sewage are broken down by bacterial action, and combine chemically to form simpler forms more resistant to further change. The oxidizing of these, through the agency of aerobic (with air) bacteria, complete the cycle, making this organic matter available again as plant food, ready again to pass through the various stages of plant life, animal food, animal tissue, and animal waste.

◆

Ship Plying Between Italy and Africa to Have Refrigerated Air

Broadway breezes will invade the Mediterranean next year when a new ship of the Cosulich Line, which will ply between Italian and Egyptian ports, will be put into service. The vessel will be equipped with an air-cooling system similar to ones used in American theaters. Mario Cosulich, engineer of the steamship company, made a special trip to New York not long ago to study the refrigeration systems in large Broadway show houses. He explained that one of the most difficult problems of the line's Egyptian service is ventilation, due to the great heat along the African shores, and said he thought theater cooling methods would prove successful at sea.

Steam Fittings *and* Accessories

A series of articles devoted to heating devices and their uses

PART II

By HAROLD L. ALT

AMONG fittings which do not stand in high favor may be mentioned the cross. The cross is a back outlet tee or a fitting with 4 outlets 90 degrees apart, and its most common use is in the forming of pipe railings when the lower pipe intersects the post as shown in Fig. 1; with reducing or bushed outlets, it is also a convenient fitting to use on a main where branches to either side of the main come opposite each other as illustrated in Fig. 2.

Yet the cross is almost invariably prohibited in all first class specifications for good piping work. This is because the cross is structurally a very weak fitting and is not regarded as a desirable adjunct to any piping system. It has already been shown how the screwing of a pipe into a fitting exerts an enormous bursting force on the fitting and it may be readily understood how a multiplying of the pipes inserted into a fitting would similarly multiply the bursting effect produced.

In the ordinary elbow of whatever degree it may be, it is found that only two pipes are inserted in the outlets

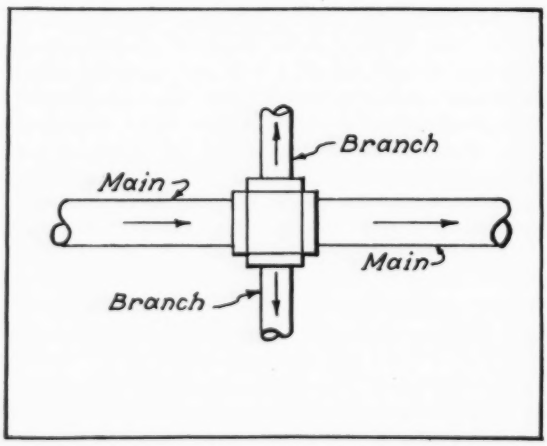


Fig. 2

of the ell and that there is plenty of good metal both in the bead or band as well as in the body of the fitting to resist the bursting tendency. It can be proven mathematically that an elbow is stronger than a tee for the same thickness of metal. With the common tee a portion of the back of an ell is cut out and a third outlet is grafted on; the hole introduced into the shell of the tee on account of the third outlet introduces a loss of

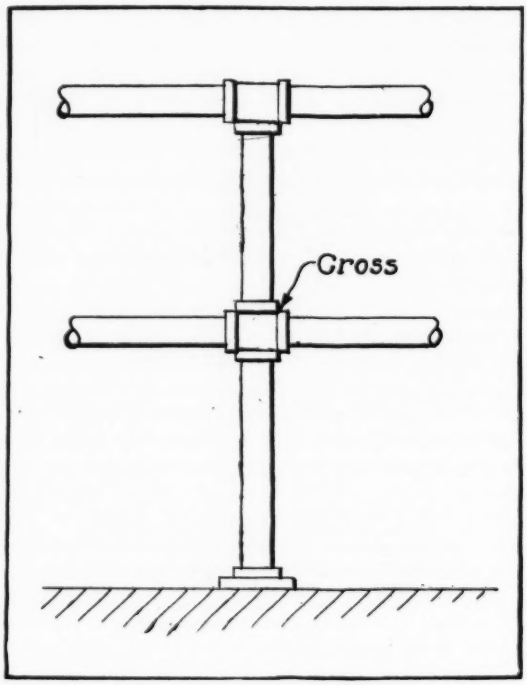


Fig. 1

strength even though the third outlet is provided with its own reinforcing bead or band.

Now a cross is a tee with a fourth outlet added, which means a new hole is introduced into the back of the tee and, although the new or fourth outlet may be provided with its own band or bead, the fitting has been materially weakened. This is plainly demonstrated in Fig. 3, where a section of a cross is shown and the small amount of metal available to resist bursting along the center line of the fitting is graphically disclosed. Combined with this small amount of metal is the excessive bursting effect produced by four pipes instead of three.

The Y Fitting

A fitting which is available although not in common use is known as a Y fitting. This is a tee in which the branch outlet enters at 45 degrees with the run instead of 90 degrees.

In ordinary steam work Y's usually are not required, but in hot water systems they possess distinct advantages. Frequently, in order to cheapen the cost of installation, tees are used in places where Y's would be much superior. It does not require argument to prove that a hot water boiler connected up as shown in Fig. 4 would have less resistance offered to the movement of the water through the piping than if it were arranged as shown in Fig. 5.

Even on steam systems where two main returns come together, better flow will be secured if a Y connection is used than if the ordinary tee is employed. A blow-off line always uses Y connections between the main blow-off and the incoming branch from the boiler, this being

indicated in Fig. 6; some installations have used tees in such cases, but they will be found to be only of the very cheapest class or else they have been employed without giving the matter of good design sufficient consideration.

Branch Tees or Manifolds

When the idea of a pipe coil first was originated the coils had to be constructed with a header made up of reducing tees and supplies, which made the cost of both labor and material considerable, to say nothing of introducing a number of joints. As soon as a real demand for pipe coils was shown, the manufacturers promptly proceeded to put on the market a substitute for the made-up header, this being the well known branch tee or manifold of the type given in Fig. 7.

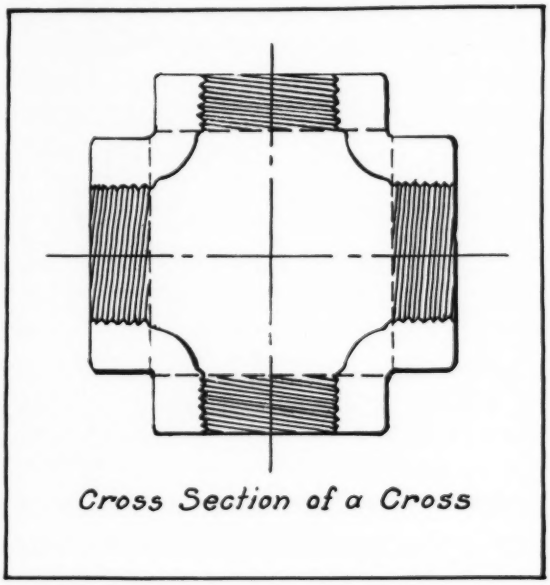


Fig. 3

This permitted a reduction of joints, a placing of the pipes in the coil on closer centers, and a great saving in the cost of making up the coils. It is unnecessary to say that a great improvement in the appearance of the coils was also a logical result of the introduction of the manifold.

At first practically all manifolds had full size tappings on each end as well as tappings for the coil pipes, but the impetus given to the use of pipe coils by the development of manifolds led to their being used in better classes of installations, and it was found that introducing steam at either or both ends of the manifold did not always give the best results as far as circulation was concerned. This difficulty was aggravated by the higher steam pressures which were formerly used in heating work. On this account, additional locations of outlets were provided, some of these being on the back of the manifold midway between the ends, some on the side of the manifold, some near the ends of the manifold on either the back or the side, and so on.

Then the question naturally arose, if the end tappings on the manifold are not to be used, why tap them and make a plug to close the tapping? Why not make a still neater design of manifold with the end outlets omitted? Manifolds are now produced either with the end tappings or, when desired, without the end tappings as illustrated in Fig. 8.

Right-and-Left Fittings

Pipe coils are largely responsible for the right-and-left fittings now on the market—at least as far as heating work is concerned. Every heating and piping man knows he cannot close a pipe circuit with the ordinary right-hand threaded fittings; somewhere in the closed circuit, and at the last point where the closure is made, a union, welded joint or right-and-left fitting must be used.

There are, of course, a great many cases in the ordinary heating system where unions are used as a matter of convenience or necessity, such as when coupling pieces of apparatus or connecting devices into the pipe line which may be required to be removed or replaced later. Every radiator valve of modern design has a radiator spud and union connection; every radiator trap is similarly equipped; connections to boilers and pumps are made through unions, pressure reducing valves *should* have a union on each side when they are not of the flanged type; but these are not caused by closed pipe circuits. If the radiator and boiler could be swung around to screw it into the pipe connection all would be well as far as connecting goes. Of course in disconnecting it might not be so satisfactory.

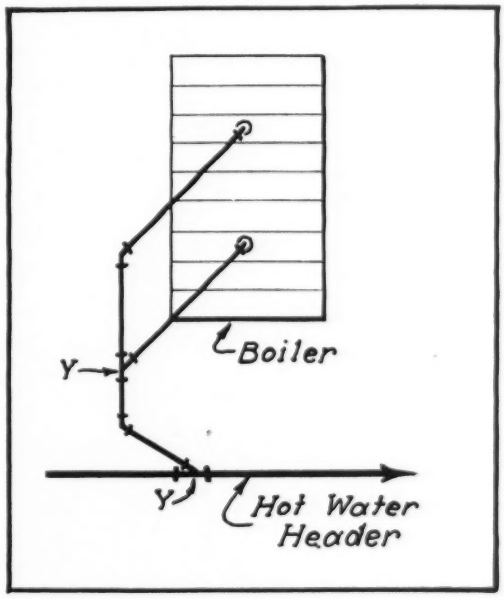


Fig. 4

With the ordinary pipe coil there is nothing to prevent the swinging of the manifold so as to make up the *first* pipe of the coil with a straight right-hand thread. It is at the second, third and following pipes where the difficulty arises, and this is due to the fact that the second pipe, together with the manifolds and first pipe from a closed loop or pipe circuit and such a closed loop or circuit *cannot* be made up with a straight right-hand thread all the way through. There must be some means of closing the last joint and this means has been found to be the union or a right-and-left thread.

When the coil headers were made up of tees and nip-

ples, the appearances were so bad that the use of unions to join the pipes did little to detract from the loops of the coil, but with the introduction of manifolds the use of unions was reduced owing to the closeness of the pipes which then became possible. Three solutions were

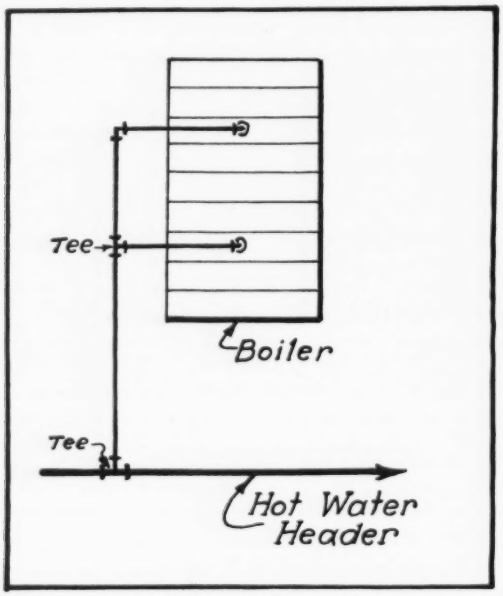


Fig. 5

found: First the use of left hand branch tappings on the manifold; second, the use of a right-and-left hand elbow on the coil pipes, and, third, the use of a right-and-left hand coupling. Of course welding may be employed, but care must be exercised in getting all the pipes properly spaced and pointing in the right direction.

The right-and-left coupling is a coupling one half of which is threaded right-hand and the other half of which is threaded left-hand. Of course the pipe entering the left hand of the coupling also must be threaded left-

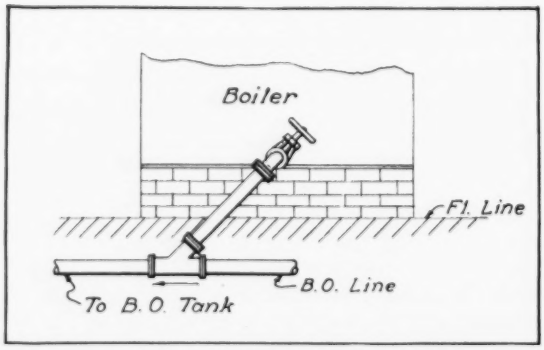


Fig. 6

hand. A right-and-left coupling is generally made of slightly different appearance on the outside in order to readily distinguish it from the ordinary coupling.

For the right-and-left elbow a common elbow is tapped with a right-hand thread in one outlet and a left-hand thread in the other. Sometimes the letter L is cast on such ells to differentiate them from the regular ells. When left-hand threads are used in the manifolds the coil outlets in *one* manifold are made left-hand and the pipes at that end of the coil are all threaded left hand. One advantage of the right-and-left pipe coupling in making up coils will be found in its permitting the use

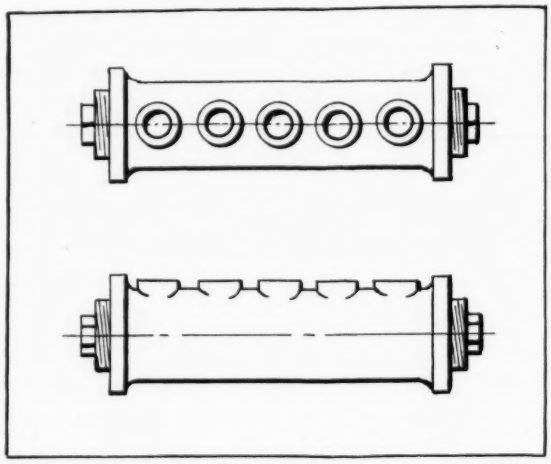


Fig. 7

of short lengths of pipe when such are available by using two short lengths to make up the long pipe of the coil, the short lengths being joined by the right-and-left couplings.

Return Bends

Pipe coils of the return-bend type do not require headers so that the consideration of the manifold is not necessary in regard to this design of coil. They do require, however, the use of return bends, from which they take their name. Originally the so-called return-bend coil was made up with two 90-degree ells and a short

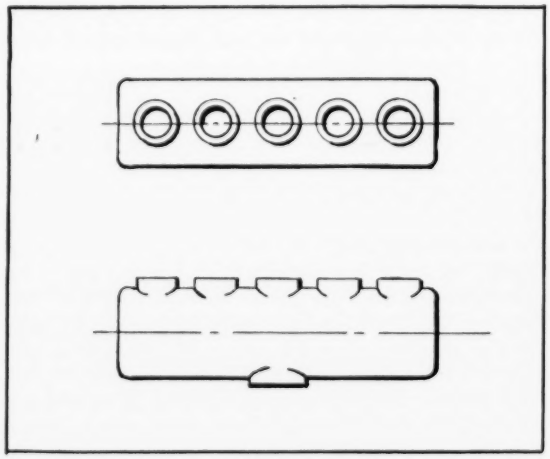
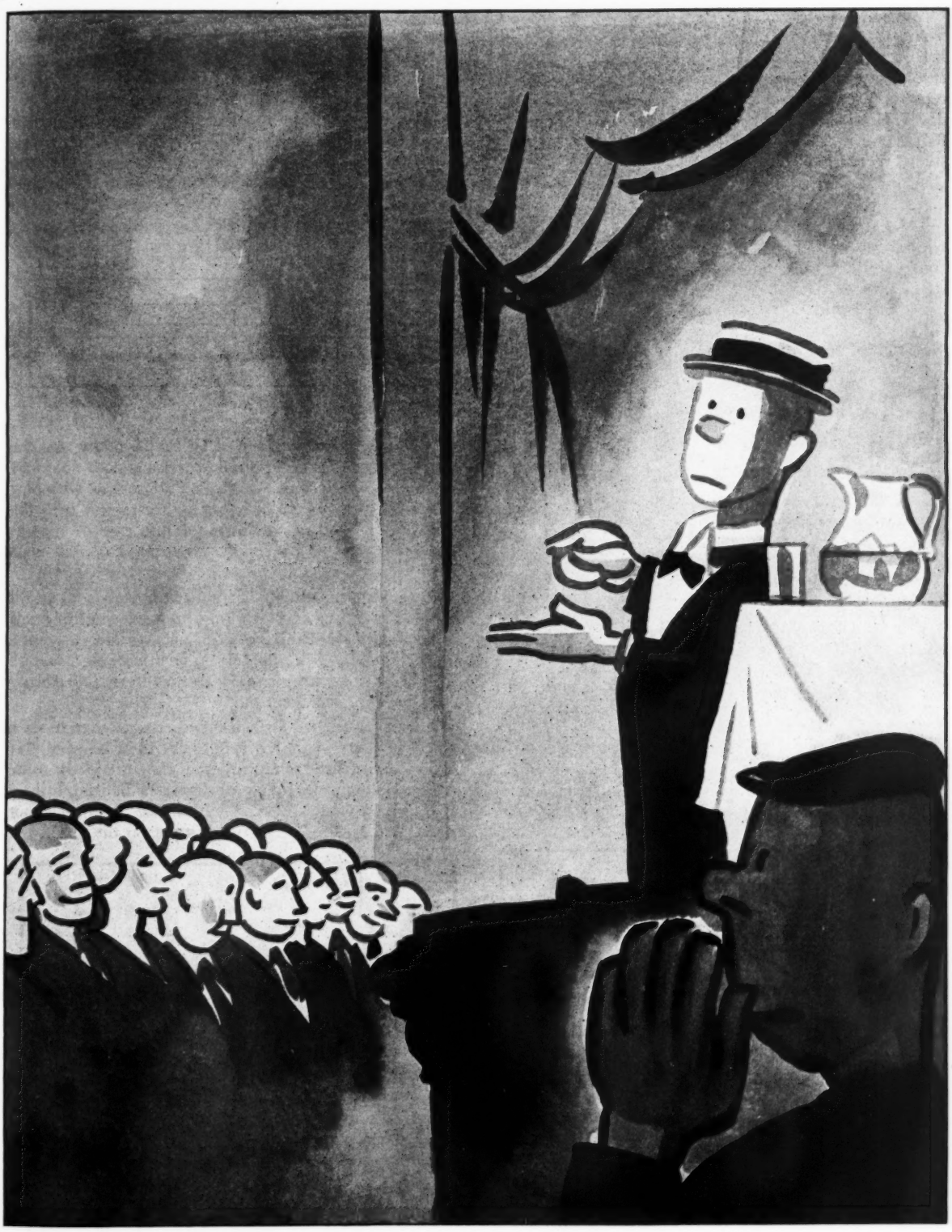


Fig. 8

nipple; then the return bend (Fig. 9) was put on the market for the purpose of reducing the cost and for the purpose of eliminating pipe joints. Whereas the two ells and short nipple had to be made up as shown in Fig. 10, the use of a return bend permits the construction of the coil as shown in Fig. 11.

Other difficulties developed in the use of returns, these



"Stop bragging, Albert, you're only a plumber's helper."

"Quiet, Willie, be quiet—I'm talking about the Hays Double-Seal Connection . . . . And, Ladies and Gents—it's the strongest, tightest, and the only two-fisted double locking joint in this entire world and then some."

consisting of the first return-bend going on without difficulty, but when the return-bend immediately below the first came to be installed it was impossible to swing it around on the thread of the second pipe without having the end of the fitting strike the first return bend already in position. On the smaller sizes of pipe this could be overcome in most cases by springing the pipes apart sufficiently to permit the return-bend to swing past the previous bend in each case, but as the pipe sizes became larger and as the length of the coil became shorter, this springing of pipes became more and more difficult.

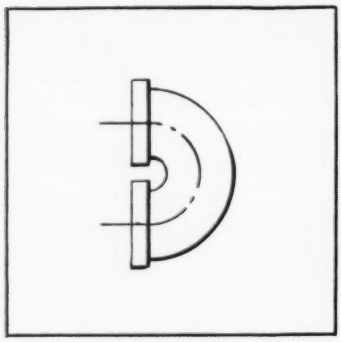


Fig. 9

To facilitate installation, especially where coils were built up in position on vertical walls, the right-and-left return bend was developed. Like the right-and-left elbow, this is simply the ordinary return bend fitting with one tapping made right hand and one tapping made left hand.

Flanged Fittings

When flanged pipe work is indulged in, it is interesting to note the comparison between the flanged fittings and screwed fittings. The following is a list of the more common types of screwed fittings and their counterparts for flanged work:

Screwed	Flanged	Screwed	Flanged
Ells, 90°	Ells, 90°	Unions	Unions (Fig.)
Ells, 45°	Ells, 45°	Bushing	Reducing Flange
Straight Tees	Straight Tees	Reducer	Reducer
Reducing Tees	Reducing Tees	Y	Flanged Lateral
Bull Head Tees	Ball Head Tees	Cross	Cross
Return Bends	None	Right-and Left Fittings	None
Plugs and Caps	Blank Flange		

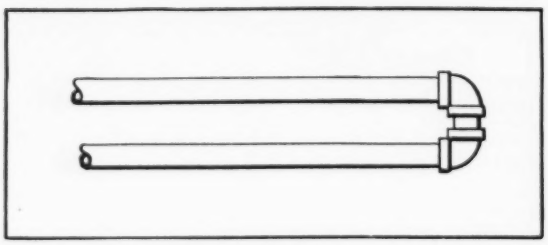


Fig. 10

It will be seen that, in the place of plugs and caps, blank flanges are substituted. Such flanges are similar to the ordinary pipe flange, but have no hold cast in the center for pipe connections.

Flanged fittings are made with many designs of flange, the most common being the ordinary flat-faced flange, which is simply the rough flange machined until the face is perfectly smooth and truly perpendicular to the center line of the fitting. Between flanges, gaskets are placed, so that when the two flanges are drawn together by means of the bolts the gasket is compressed and makes a tight joint. Other types of flanges are the raised face, male and female, grooved, Van Stone, etc.

Reducing flanges which, on flanged piping, take the place of bushings on screwed pipe, are simply the ordinary pipe flange in which the outside diameter, bolts and drillings are made to conform to the standard for a certain larger size of pipe, but where the center tapping for the pipe is made for a smaller size of pipe. These flanges are also procurable in the eccentric pattern, such as is illustrated in Fig. 12, where the bottom of the smaller tapping is kept on the same level as the bottom of the larger pipe.

Owing to the fact that there are no pipe threads in flanged fittings (except in rare instances) and that any

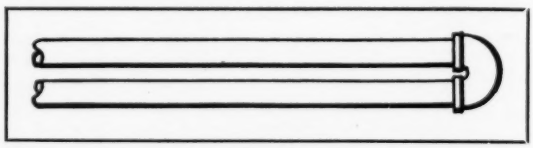


Fig. 11

flanged fitting may be removed by simply taking out the bolts, the matter of right-and-left threads does not enter into the subject of flanged fittings. Of course, with pipe flanges of the screwed variety they are tapped with the standard pipe thread but, owing to the ease of disconnecting the flanges by simply removing bolts, all such threads are right hand.

Flanged fittings are regularly made in standard weight for 125 lb. per sq. inch working pressures and in extra heavy weight for 250 lb. per sq. inch working pressure. Lighter fittings for 25 lb. per sq. inch working pressure are also turned out by some manufacturers, these being called low pressure fittings.

In ordering flanged fittings, care must be taken to state in just what condition the flanges are to be shipped. If simply flanged fittings are ordered, they are likely to be delivered simply as rough castings; if flanged fittings faced are ordered, the flanges will be faced but not drilled, and if faced and drilled is put on the order, the

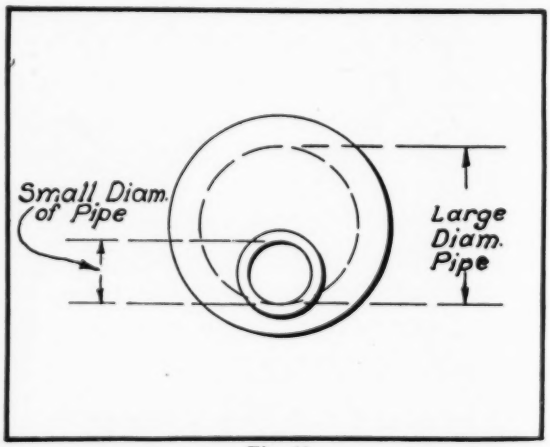
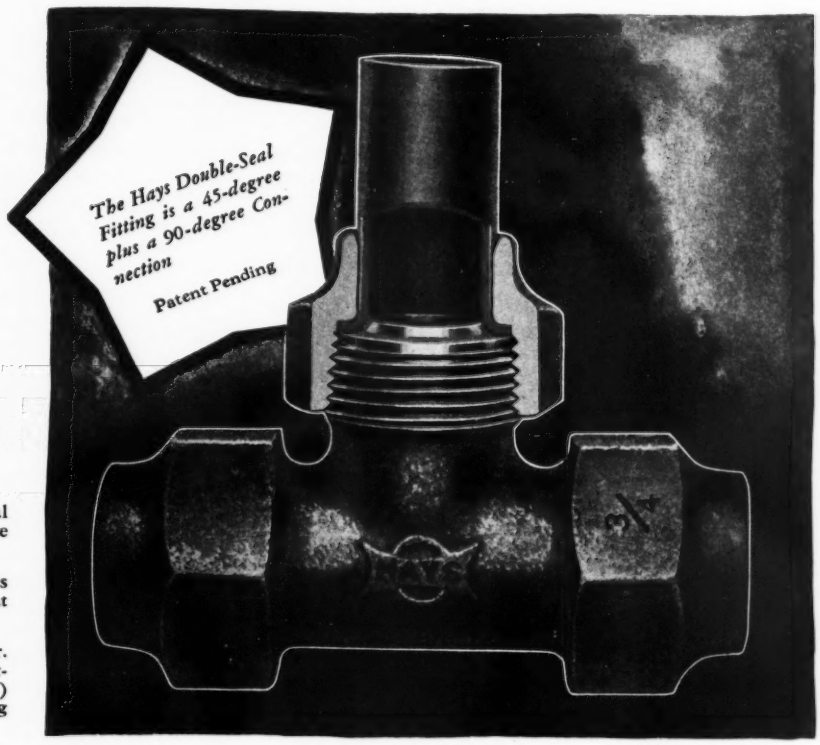


Fig. 12

drilling standard should be added as well as the information as to whether they are to be faced and drilled only, or if the drilling should be spot faced on the back of the flange so as to give a smooth square surface on which the washers and nuts of the bolts may rest.

AND HAYS *has* SOMETHING TO TALK ABOUT...



★Exclusive with Hays—this double seal provides double strength, safety and ease of installation.

The 45-degree seat of the fitting holds the pipe in a wedge, making a seal that is absolutely tight.

The 90-degree seat is the shock absorber. It (1) locks the pipe, (2) provides a second seal of positive tightness and (3) protects the 45-degree seal by absorbing all pulling strains and vibrations.

.....*especially to*

PLUMBING CRAFTSMEN

The Hays Double-Seal Connection is different from any other connection used in copper plumbing. Instead of providing just one contact with the flanged pipe, Hays provides two—because it takes two to get *both* the tightness and strength to make a joint positively leakproof.

Copper plumbing has been made economical by the Hays Copper Plumbing Method, which employs this exclusive connection. Threading is eliminated and a lighter and less costly pipe is used. Such a plumbing system is leakproof and troubleproof—unequalled by any other method or any other combination of materials.

There is profit in this plumbing that will prove satisfactory to every plumber. With the Hays Double Seal Connection, Copper Plumbing has such a clean mechanical appeal that it will hold the attention of the best mechanics. A good job to handle, and profitable business are two of the many things Hays has to talk about to progressive plumbers.

Write for details

HAYS MANUFACTURING COMPANY · ERIE, PA.

HAYS DOUBLE SEAL CONNECTIONS

This tabulation is the fifth in a program designed to give the plumbing industry a concise source of information on codes

Plumbing Code Tabulations

By R. M. STARBUCK, JR.

Article No. 5

MANY cities require that an amount of $25 to $50 be deposited by the master plumber, as security to the municipality against expense of replacing or repairing sidewalks, streets, etc., left defective by the plumber.

Several of the cities in New Jersey have an ordinance which provides that the Master Plumbers Association may provide a bond covering the responsibilities of its members. This arrangement is covered by the following ordinance, which follows the ordinance covering the posting of a bond of $1,000 in the usual manner:—

"Any master plumbers association duly incorporated under the laws of the State of New Jersey, may furnish a bond in the sum of $2,000, conditioned as aforesaid, for the faithful and proper performance, in accordance with the rules, regulations and ordinances of this board, of all plumbing work, both inside and outside of buildings, done by any one of its members, their agents or employes, as hereinafter designated, within the limits of the Town of Kearney, with surety satisfactory to this board, will be accepted in lieu of the bonds herein above provided for, as to all members of such association."

Proper Fixing of Amounts of Bonds Important

It seems to us that wisdom is called for, in fixing amounts of plumber's bonds and license fees.

There seems to be no question that it is entirely legitimate to look for a considerable degree of protection from this source, but there is a question as to when the amount ceases to be just and becomes extortionate.

The public, if intelligent concerning such matters, will naturally desire to be protected against unscrupulous, inefficient and irresponsible men purporting to be competent master plumbers. Also, it seems to be fair that the plumbing trade should be protected as far as possible, against competition within its own ranks, showing the above named qualities.

This protection for the public and for the plumbing trade is gained to a certain extent by the requiring of a bond and license fee. However, it does not seem fair to raise these sums to such an extent that they bar out qualified men, and leave the field open almost exclusively to old, firmly established concerns.

It is a certainty, on general principles, that unless the bond and license fee are just, they will sooner or later fail of their purpose. And moreover, the original purpose must be a fair one too,—not based on the wholesale exclusion of new concerns, but on reasonable protection for the city or town, the public and the plumber himself.

Simply because the amount of bond and license are high, we cannot by any means jump to the conclusion that they are unjust. Local conditions, we can readily conceive, might govern these things to a large extent.

We do feel, however, that a nominal license fee of $1.00 and even as low as 50 cents, does not accomplish anything in the way of protection, and can really see no good reason for laying such a tax.

Reasonable License Fees

Our own idea of a license fee is that $25 to $50 seems a fair amount.

A subject somewhat apart from the one we have been discussing is that of monthly or quarterly sewage service charges. In some sections, notably Texas, some of the smaller towns have a method of maintaining their sewer systems by imposing a set charge against all houses and other buildings connected with the sewers.

Some of these towns base the charge on the nature of the building,—a maximum of $6.00 per year for instance, on residences, and $12.00 for business buildings. Others base their charges on the number of inmates, and still others on the number and character of plumbing fixtures.

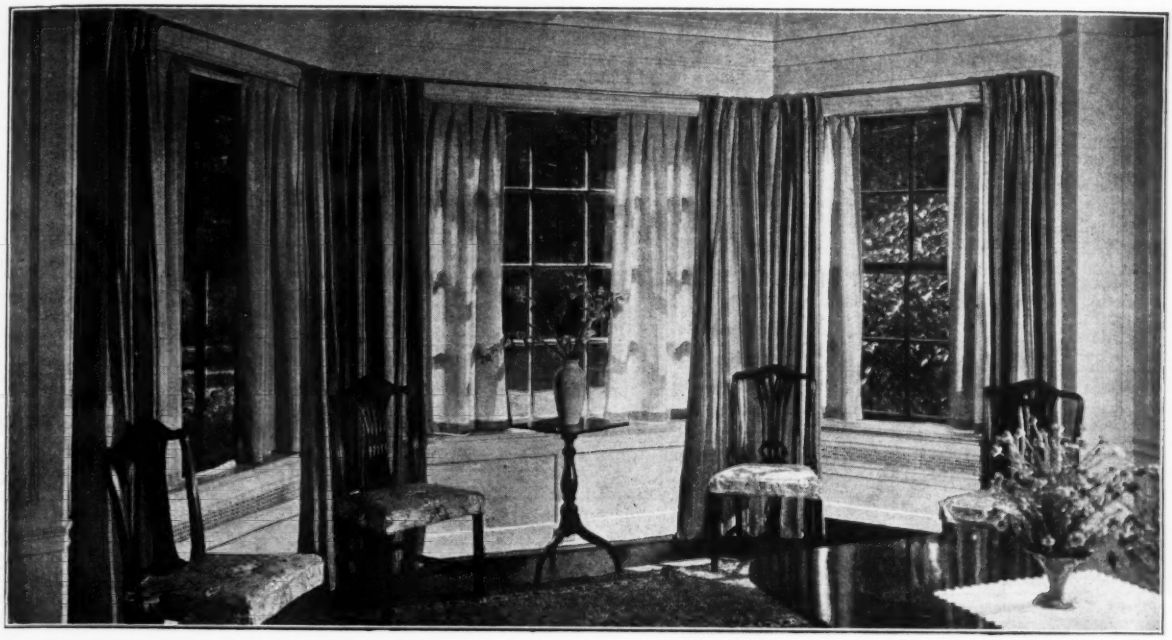
There is one thing to be said for plumbing code sections concerning bond and license fee,—these requirements are in nearly all cases clearly and legally stated. Why some other requirements are not handled in the same correct way is not clear.

Sometimes, however, the ordinance covering bonding is so involved with various provisions that its real meaning and purpose become confused. It would seem that a direct, concise statement is sufficient. We offer the following as a good example:—

"Before any license shall be granted to any person to carry on the business of plumbing, he shall execute a bond to the city of Lansing, with two or more sureties, to be approved by the board of health, in the sum of two thousand dollars, conditioned that he will indemnify and save harmless the city of Lansing, from all accidents or damages caused by any negligence in either the execution or protection of his work, or from any unfaithful or inadequate work done under or by virtue of his license; and that said license shall also conform to all the conditions and requirements of the city for his government, and in default thereof will submit to such penalties as are or may be prescribed by the state law."

Posting of Plans and Specifications

We note with satisfaction that a very large majority of cities and towns demand that before a permit is issued for the installation of plumbing, plans and specifications must be submitted to the proper authorities. This, of course, is a wise provision,—one more means of properly regulating and control-



Radiators and bay windows fit each other when they're ROBRAS 20-20 Radiators

The point being this:

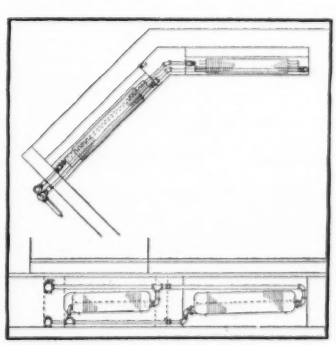
You can tell your customers that all restrictions on placing radiators are off. That you can show them how to fit their radiators into any part of their rooms because the radiators don't go into the rooms at all.

They don't — if they're Robras 20-20 Radiators.

They go into the walls.

Obviously, Robras 20-20 Radiators must be compact. They are. They are 20 per cent the size of equal cast-iron radiators. They are 20 per cent the weight. They can be installed four or five times as quickly.

In the walls — out of sight — out of the way



A space under the windows. Compact Robras Radiators. And that's all.

They cost more? Sure. But the discount is better than on old-fashioned radiators. They cost you less to install. You make more per job!

There's a lot to this story of these sturdy, electrically-welded, fast-heating, freeze-proof, brass radiators.

Let's send it to you, with data sheets and price lists. Ask us — today.

ROME BRASS RADIATOR CORPORATION, 1 East 42nd Street, New York City

City	Examination of Masters and Journeymen. License without Examination. Registration only	Bond Required of Master Plumber	License Fee Required of Master Plumber	Examination and Approval of Plans and Specifications before Granting of Permit	Fees Collected for Permits and Inspections	Testing of Plumbing System
Oregon						
Eugene	No mention				50c for each of first 6 fixtures; 25c for each additional fixture	Water, air; no mention of final.
Marshfield	Exam. of M. P.	$500		Yes	$1 for first fixture; 50c for each additional fixture	Water; no mention of final.
Portland	Not shown in code				$1 for first fixture; 50c for each additional fixture; $1 for each house drain	Water; no mention of final.
Pennsylvania						
Abington	Registration only		$20—Renewal $10	Yes	$10 for 1 to 7 fixtures; $1 for each additional fixture	Water, air; no mention of final.
Allentown	Exam. of M. P. and Jour.		$5—Renewal $1	Yes		Water, air; air, peppermint final.
Altoona	Exam. of M. P. and Jour.		$5—Renewal $1	Yes	$1 plus 25c for each trap; 50c for final approval	Water, air; air, peppermint final.
Ambridge	Exam. of M. P. and Jour.		$5—Renewal $1	Yes		First test not named; air, water, smoke, peppermint final.
Beaver Falls	No mention				$3 for six-room house or less; all other buildings, $5	Water; no mention of final.
Bethlehem	Exam. of M. P. and Jour.		$5—Renewal $1	Yes	Not exceeding 7 fixtures, $2; each additional fixture 25c	Water, air; air, peppermint final.
Duquesne	Exam. of M.P. and Jour.		$5—Renewal $1	Yes		Water, air; air, peppermint final.
Easton	Exam. of M. P. and Jour.		$5—Renewal $1	Yes		Water, air; air, peppermint final.
Edgewood	No mention			Yes		Water, air; final required, not named.
Harrisburg	Exam. of M. P. and Jour.		$5—Renewal $1	Yes		Water, air; air, peppermint final.
Kingston	Exam. of M. P. and Jour.		$5—Renewal $1	Yes		Water, air; air, peppermint final.
Lancaster	Exam. of M. P. and Jour.		$5—Renewal $1	Yes	$3 for 1 to 5 fixtures; 25c for each additional fixture	Water, air; air, peppermint final.
Norristown	Registration only		$5	Yes	Inspection $2; certifying $800-1000, $6; $500-800, $5; $300-500, $4; $200-300, $3; $100-200, $2	Air, water; no mention of final.
Philadelphia	Registration only		$5—Renewal $1	Yes	$1 for 1 to 7 fixtures; 25c for each additional fixture	Air (water if necessary); no mention of final.
Pittsburgh	Exam. of M. P. and Jour.		$5—Renewal $1	Yes		Water, air; air, peppermint fianl.
Reading	Exam. of M. P. and Jour.		$5—Renewal $1	Yes	First fixture $1; additional fixtures 50c each. Additional for storm sewer, according to size	Water; smoke, peppermint final.
Scranton	Exam. of M. P. and Jour.		$5—Renewal $1	Yes		Water, air; air, peppermint final.
Wilkes-Barre	Exam. of M. P. and Jour.		$5—Renewal $1	Yes		Water, air; air, peppermint final.
Wilkinsburg	No mention			Yes		Water, air; no mention of final.
York	Exam. of M. P. and Jour.		$5—Renewal $1	Yes		Water, air; air, peppermint final.
Rhode Island						
Newport	Exam. of M. P. and Jour.		$3	Yes		Water; peppermint, smoke final.
Woonsocket	Exam. of M. P. and Jour.		License $2; Registration $2; Renewals 50c each			Water, air, peppermint.
South Carolina						
Camden	Registration only	$500		Yes		No mention.
Charleston	Exam. of M. P. and Jour.		$5—Renewal 50c	Yes		Water or other test; no mention of final.
South Dakota						
Aberdeen	Licensed	$1000	$10	Yes		Water, air; smoke or peppermint final may be required.
Sioux Falls	Exam. of M. P. and Jour.	$1000	$100		$1 for first fixture; 50c each for additional fixtures up to 6 and 25c for fixtures above 6	Water, air; smoke or peppermint final at discretion of inspector.
Tennessee						
Chattanooga	Licensed			Yes		Water; no mention of final.
Elisabethton	Exam. of M. P. and Jour.	$1000	$50—Renewal $15	Yes	$1 for each fixture	Water; final required but not named.
Knoxville	Licensed	$10,000	$30	Yes	$1 plus 75c for each fixture	Water; smoke final.
Memphis	Exam. of M. P. and Jour.	$500		Yes	$2 plus 50c for each fixture	Water, air; smoke, peppermint final.
Nashville	No mention			Yes	$2 for sewer or septic tank connection; 50c for each rain leader; 50c for each fixture	Water; no mention of final.
Texas						
Abilene	Licensed	$1000	$15		$1 for 1 fixture; 50c for each of next 4; and 25c for all fixtures over 5	Water, air; air final.
Alpine	No mention	$1000			$1.50	
Amarillo						
Beaumont	Exam. of M. P. and Jour.	$1000	$3—Renewal $1		2% of contract up to $500; 1% of contract over $500	Water; no mention of final.
Big Spring	Licensed	$1500	$10—Renewal $1		$1 for 1 fixture; 50c for each additional fixture	Water, smoke or peppermint final at direction of inspector.
Cleburne	Exam. of M. P.	$1000	50c		$1 for 1 to 4 fixtures; 25c for each additional fixture	Tests required, but no detail given.
Corpus Christi	Exam. of M. P. and Jour	$1000			50c for each fixture up to 5; 25c for each fixture from 5 to 25; and 10c for each fixture over 25; $2.50 for permit to connect with sewer	Water, air; air final.
Corsicana	Exam. of M. P. and Jour.		$5—Renewal $2			Water; smoke or peppermint final at discretion of inspector.

City	Examination of Masters and Journeymen. License without Examination. Registration only	Bond Required of Master Plumber	License Fee Required of Master Plumber	Examination and Approval of Plans and Specifications before Granting of Permit	Fees Collected for Permits and Inspections	Testing of Plumbing System
Dallas	Exam. of M. P. and Jour.	$3000	$36		$1 for 1 fixture; 50c for the next 30 fixtures; 25c for each fixture above this number	Water; smoke or peppermint final at discretion of inspector.
El Paso	No mention			Yes	$1 for 1 fixture; 50c for each additional fixture	Water; no mention of final.
Fort Worth	Exam. of M. P. and Jour.	$5000	$3—Renewal 50c		$1 for 1 fixture; 75c for each additional fixture	Water; no mention of final.
Galveston	Exam. of M. P. and Jour.	$1000	$3—RenewalN.C.		50c for each fixture	Water; no mention of final.
Goose Creek	Exam. of M. P. and Jour.	Required amount not named	$1		60c per fixture up to 25; 30c each for additional fixtures	Water; smoke or peppermint final at discretion of inspector.
Houston	Exam. of M. P. and Jour.	Required amount not required	$1		60c per fixture up to 25; 30c each for additional fixtures	Water; smoke or peppermint final at discretion of inspector
Laredo	Exam. of M. P. and Jour.	$1000			$1 for 1 fixture; 50c each additional to 10; 25c each over 10	Water; no mention of final.
Lubbock	Exam. of M. P.	$3000	$25		$1 for 1 fixture; 75c for each additional fixture	Water; no mention of final.
New Braunfels	No mention					No mention.
Pampa	No mention	$5000	$50	Yes	50c per permit; $3 for inspection	Water, smoke; no mention of final.
Plainview	No mention	$3000			50c for each fixture	Water, air; no mention of final.
Port Arthur	Exam. of M. P. and Jour.	$2000			2% of contract up to $1000; 1% of all in excess of $1000	Water; peppermint final at discretion of inspector.
San Angelo	Exam. of M. P. and Jour.	$2000	$50		75c for 1 fixture; 50c each for 2 additional fixtures; 25c for each additional fixture	Water, air; peppermint or smoke final at discretion of inspector.
San Antonio	Exam. of M. P. and Jour.				1 fixture $1; 50c for each fixture additional up to 10; 25c for each fixture over 10	Water; no mention of final.
Sweetwater	No mention					No mention.
Temple	No mention	$1000	$6		$1 for 1 fixture; 50c each for first 30 fixtures; 25c for each additional fixture	Water; peppermint or smoke final at discretion of inspector.
Weatherford	Licensed	$500		Yes	$2.50	Peppermint, water or smoke; no other mention.
Utah						
Salt Lake City	Licensed	$10,000	$25		$1 for the first 4 fixtures; 25c for each additional fixture	No mention.
Vermont						
Rutland	Licensed		$1	Yes		
Virginia						
Charlotteville	Exam. of M. P. and Jour.	$500		Yes	$1 plus 25c for each fixture	Water, air; no mention of final.
Newport News	Registration only	$500		Yes		Ether, peppermint, water, smoke named.
Norfolk	Exam. of M. P.	$1000		Yes	$1 plus 25c for each fixture	Air, water; smoke final.
Peterborough	Licensed		$10	Yes		Water, smoke; smoke final.
Portsmouth	Exam. of M. P. and Jour.	$1500	$1	Yes		Water, air; no mention of final.
Richmond	Registration only		$1—Renewal 50c	Yes		Water, air; no mention of final.
Roanoke	Licensed					No mention.
Washington						
Aberdeen	No mention			Yes	25c for each fixture	Water. air; no mention of final.
Seattle	No mention					Water, air; peppermint final.
Spokane	No mention	$1000				Water, air; smoke. peppermint final.
Tacoma	Licensed	$1000		Yes	$1 plus 30c for each fixture	Water; air; no mention of final.
Wenatchee	No mention			Yes	$1 plus 50c for each of first 4 fixtures; 20c for all fixtures from 4 to 20; 10c per fixture over 20	Water; other tests at discretion of inspector.
West Virginia						
Huntington	No mention			Yes	$1 for each of first 4 fixtures; 15c for each fixture over 4	Water; no mention of final.
Wheeling	Licensed		$50		First W. C. $1, additional 25c; first bath, pedestal urinal or slop sink, 50c, additional 25c; other fixtures, first 25c, additional 15c	Water, air; air final.
Wisconsin						
Beloit	Exam. of M. P. and Jour.	$1000	$5—Renewal $2		Each main sewer connection $2; first fixture 50c; each additional fixture 25c	Required, but not detailed.
Madison	Exam. of M. P. and Jour.	$1000	$25—Renewal $15	Yes	Inspection of house sewer $1; 50c for each fixture	Water, air; smoke final.
Milwaukee	Exam. of M. P. and Jour.	$1000		Yes	Sewer connection, sanitary or storm, 6-inch, $5; 8-inch, $10; larger than 8-inch, $1 per inch	Water, air; smoke final.
Sheboygan	Exam. of M. P. and Jour.	$1000			$1 for inspection; 50c for each fixture; $1 for house sewer connection	Water, air; smoke final.
Superior	Exam. of M. P. and Jour.	$1000				Water, air; no mention of final.
Wyoming						
Casper	Licensed	$5000	$100	Yes	$1 for 1 fixture; 25c for each additional fixture; $1 for sewer inspection	Water, air; no mention of final.
Cheyenne	Licensed	$1000	$25		25c for each fixture	Water, air; no mention of final.
Canada						
Edmonton, Alta.	No mention			Yes		Air, water; no mention of final.

CADWELL No. 10 NON-ADJUSTABLE AIR VALVES

Increase Boiler Efficiency

There are many fine boilers that are condemned as not "doing the job" when all that is wrong is the valves. Cadwell No. 10 Non-Adjustable Air Valves help the boiler to develop its highest efficiency. They do this by speeding up the entire system and stopping sluggishness at the radiators and return lines. As a consequence, fuel is saved, and complete customer satisfaction follows.

Cadwell No. 10 closes the instant steam comes in contact with the thermostatic float. The diaphragm expands and lifts the float and valve pin into the seat, and saves your customers' money and gives them more heating comfort. These valves also made in 1/8-in. and 1/4-in. bottom outlet for return lines.

We will be glad to give complete information upon request.

Our Catalog

The
BEATON & CADWELL MFG. CO.
Established 1894
NEW BRITAIN, CONN.

City	Examination of Masters and Journeymen. License without Examination. Registration only	Bond Required of Master Plumber	License Fee Required of Master Plumber	Examination and Approval of Plans and Specifications before Granting of Permit	Fees Collected for Permits and Inspections	Testing of Plumbing System
Vancouver, B. C.	Licensed		$1	Yes	50c each for first 5 fixtures; 75c for each additional fixture	Water, air; no mention of final.
Victoria, B. C.	No mention		$50—Renewal $5			Water, air; smoke or peppermint final at discretion of inspector.
Winnipeg, Man.	Licensed			Yes	50c per fixture	Water, air; smoke final.
St. John, N. B.	Exam. of M. P. and Jour.			Yes		Water, smoke, etc., no mention of final.
St. Johns, N'f'l'd.	Exam. of M. P.	$50			$2 for smoke test	Water; smoke final.
Brantford, Ont.	No mention				$1 plus 25c for each fixture	Water, smoke final.
Fort William, Ont.	No mention			Yes	$1 for each stack; 25c for each fixture over 4	Water, air, smoke; no mention of final.
Kitchener, Ont.	Exam. of M. P. and Jour.		$10	Yes	$1 for fixtures up to 6; 25c for each additional fixture	Water; smoke final.
London, Ont.	No mention			Yes	$1.50 for each inspection of 5 fixtures; 25c for each additional fixture	Water; smoke final.
Ottawa, Ont.	License implied				$1 for 1 stack with 4 fixtures; 25c for each additional fixture	Water; smoke final.
Peterborough Ont.	License implied		$10	Yes		Water; smoke final.
St.Catherines,Ont.	No mention			Yes	$1 for each inspection	Water; smoke final.
Toronto, Ont.	License implied			Yes		Water; smoke final.
Windsor, Ont.	Exam. of M. P.		$10—Renewal $5	Yes		Water; smoke final.
Montreal, Que.	Exam. of M. P.					Water, smoke, peppermint; no mention of final.
Moose Jaw, Sask.	Exam. of M. P. and Jour.		$2—Renewal $1			Water; smoke final.
Regina, Sask.	Exam. of M. P. and Jour.			Yes	$1 for first 4 fixtures or less; 25c for each additional fixture	Water; smoke final.
Saskatoon, Sask.	Exam. of M. P. and Jour.			Yes	1 stack and not over 4 fixtures $2; $1 for each additional stack; 25c for each additional fixture	Water, air; smoke final.

ling plumbing operations. Sometimes, we suspect, the filing of plans and specifications is not supported by proper study before approval is given, but nevertheless, the provision is in general productive of good results.

Many plumbing codes state the requirement, that plans and specifications be submitted, in an indefinite and unsatisfactory manner. Other codes, however, handle the subject clearly, as in the following, which is taken from the plumbing code of Holyoke, Mass.:—

"Plans must be submitted to the board of health in the form of drawings, and must be accompanied by written specifications. The drawings and prints shall show plan and section, and in sufficient detail to show fully the proposed work. One vertical section will be accepted as sufficient if it can be made to show all the work; if it does not show all the work two or more such sections must be furnished. When the plumbing of a row of houses is to be the same, a detailed plan of one of said houses will be sufficient, provided all of said plumbing shall be done under one contract; but all must be included in a general plan showing the relation of all of the houses to the sewer.

"The plans will be examined in the order of their filing, and shall be approved or rejected within two days (holidays and Sundays excepted) after the date of filing. When said plans are rejected, the inspector of plumbing will, if requested, state the grounds of rejection, and may suggest such amendments as will remove the objection, but he shall not make any such amendment or alteration himself.

"Said plans when approved will be given a serial number. Permits for construction, inspection, reports and certificates of completion, will be numbered to correspond with said serial numbers. The inspector of plumbing shall place on the approved plans the number of the permits issued in connection therewith and the serial number of the plan, deliver the duplicate copy to the party filing the same, and place the original plan in the permanent file of plans. Duplicate plans shall be furnished for all extensions, alterations or other work to be done in connection with plumbing or house drains in old buildings (except minor repairs) and the work shall be done in the same manner and under the same rules as is required for new buildings."

Now we come to the collection of fees for the issuing of permits, inspection of plumbing installations, etc.

The collection of such fees, judging from our tabulation, is quite general, with the exception of the State of New York, where it is not general practice.

Collection of Fees a Just Practice

The collection of such fees appears to be an entirely just requirement. The municipality is put to a very considerable expense in the maintaining of its plumbing department, and it seems entirely just that the support of this work should fall upon those who receive the benefit, in the same way that the upkeep of roads is now largely paid for by the drivers of cars using them. The fee covering permit and inspection becomes a legitimate part of the plumber's cost charged against the installation to which it ap-

plies, and is finally paid by the owner of the property involved.

We were exceedingly surprised to observe the great variety of methods for basing these fees. A study of the tabulation of this item will show that there are hardly two municipalities which use exactly the same plan.

Many of the codes call for a stated fee for the permit on which the work is based, with further fees depending on the number of fixtures installed. This seems as satisfactory a plan as any.

Corsicana, Texas, probably has the most complicated schedule of fees. This is based on material used, and calls for a certain varying tax on each foot of pipe used underground, also for that used above ground, also for each fixture, and for other materials.

The final item shown in our tabulation covers the subject of testing of the plumbing system.

More than any other subject we have covered, this is handled least satisfactorily in plumbing codes.

Testing Is Assurance Against Poor Workmanship

In our opinion the proper testing of a plumbing system is of very great importance. It certainly is first class insurance against poor workmanship and poor material. Just why so many codes that handle other regulations satisfactorily, skip over the subject of tests with such scant detail, we are at a loss to understand.

In some instances there is no mention of a test in the code. Possibly in some of those instances tests are actually called for by the inspector, but apparently it would be no violation of the terms of the code if the plumber forgot or refused to apply tests to his work.

In other cases, the code contains no definite demand for a test, but some slight allusion to the subject in some other part of the code shows that some sort of test is probably used.

Our impression is that a majority of cities and towns make no actual mention whatever of a final test. We presume that in most of these instances a final test is actually required, but there is nothing in the code to prove this. The consequence is that our tabulation probably shows many codes making no statement concerning a final test, which actually call for it in practice.

There are many instances, however, of plumbing codes which handle the subject of tests in a proper manner. Mobile, Ala., is one of these, and from their code, issued in 1929, we quote the following specifications for plumbing tests as unusually thorough and satisfactory:—

"SYSTEM TESTS: All the piping of a plumbing system shall be tested with water or air. After the plumbing fixtures have been set and their traps filled with water, the entire drainage system shall be submitted to a final air pressure test. The inspector of plumbing may require the removal of any cleanouts to ascertain if the pressure has reached all parts of the system.

"METHODS OF TESTING: The water test shall be applied to the drainage system in its entirety or in sections. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening above the roof, and the system filled with water to the point of overflow above the roof. If the system is tested in sections, each opening shall be tightly plugged, except the highest opening of the section under test, and each section shall be filled with water; but no section shall be tested with less than a 10 ft. head of water or a 5 lb. pressure of air. In testing successive sections, at least the upper 10 ft. of the next preceding section shall be re-tested, so that no joint or pipe in the building shall have been submitted to a test of less than 10 ft. head of water or a 5 lb. pressure of air. Under any test the water or air pressure shall remain constant for not less than 15 minutes, without any further addition of water or air.

"AIR TEST: The air test shall be made by attaching the air compressor or test apparatus to any suitable opening and closing all other inlets and outlets to the system until there is a uniform pressure sufficient to balance a column of mercury 10 inches in height or 5 lb. per square inch on the entire system. This pressure shall be maintained for 15 minutes.

"FINAL AIR TEST: The air machine shall be connected to any suitable opening or outlet and an air pressure equivalent to 1 inch water column shall be applied and left standing at least 15 minutes. If there is no leakage or forcing of trap seals indicated by the fluctuation of the drum, float or water column, the system shall be deemed air tight.

"ORDER OF TESTS: The tests shall be made separately as follows: (a) The building sewer and all its branches from the property line to the building drain. (b) The building drain and yard drains, including all piping to the height of 10 ft. above the highest point on the building drain, except the exposed connections to fixtures. (c) The soil, waste, vent, inside conductor, and drainage pipes which would be covered up before the building is inclosed or ready for completion. The tests for (b) and (c) may be combined. (d) The final test of the whole system. (e) After each of the above tests have been made and proved acceptable, the inspector of plumbing shall issue a written approval.

"COVERING OF WORK: No drainage or plumbing or sewage system or part thereof shall be covered until it has been inspected, tested, and approved as herein prescribed.

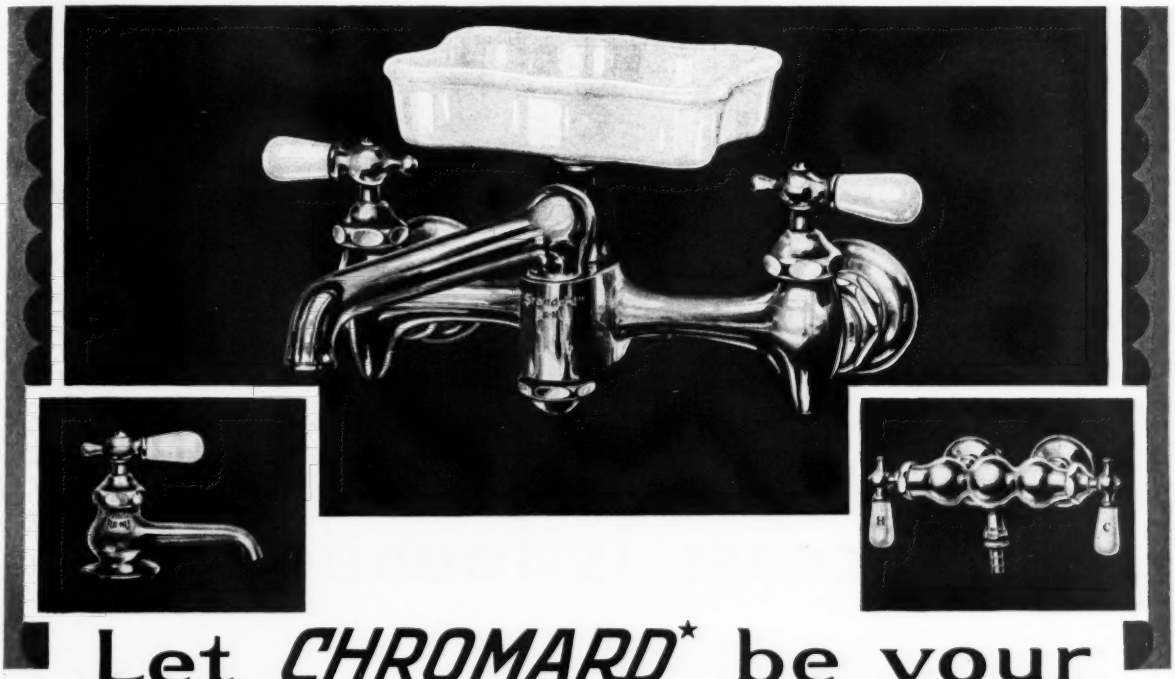
"UNCOVERING OF WORK: If any building drainage or plumbing or sewage system or part thereof is covered before being regularly inspected, tested, and approved, as herein prescribed, it shall be uncovered upon the direction of the inspector of plumbing.

"DEFECTIVE WORK: If any plumbing work or test of same shows defects, such defective work or material shall be replaced within 3 days, and inspection and test repeated.

"ALTERATIONS, REPAIRS AND EXTENSIONS: All alterations, repairs, or extensions, which shall include more than 5 ft., shall be inspected and tested.

"CONDUCTOR PIPES: Conductor pipes and their roof connections within the walls of buildings, or conductor branches on the outside system where such

(Continued on Page 143)



Let *CHROMARD** be your insurance against losses from tarnish

You insure against fire and theft; you take out compensation and life insurance. But what about another loss, an unseen one, from which your business constantly suffers — the loss of brass goods which become unsaleable because of corrosion and tarnish?

You break a package of nickeled fittings, you use one or two, and often leave the balance exposed to the inevitable toll of time and the ravages of tarnish and corrosion. Later you break another package, and then another, and when inventory time comes you have an assortment of fittings for the junk pile—a costly assortment, too, for it means not only the loss of all the profit but a great part of the initial cost.

Why risk this waste and incur this probable loss? Why not let "Standard" Chromard finish insure you against this costly tarnish. Facts, after all, are the best selling argument. The advantage of Chromard in added beauty, service and satisfaction will far outweigh the slight added cost.

Every day more wholesalers and dealers are confining their stocks to Chromard. Keep in step with this progressive move. Doing so, you keep pace with your increasing obligation to give your customers only the best, and you add to your profit as well.

"Standard" BRASS GOODS

Standard Sanitary Mfg. Co.
PITTSBURGH

*CHROMARD—(a "Standard" development, named from *CHROMium* and *"StandARD"*), the most durable, non-tarnishing finish for plumbers' brass known, PLUS, the "Standard" trade mark and all that it signifies in quality and service.

DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Unmatched quality and dependable service are the watchwords upon which our success is founded and maintained. The ever increasing volume of sanitary ware shipped out from our two plants is proof of increased recognition of this quality and service. . . .

FORDS PORCELAIN WORKS

PERTH AMBOY, NEW JERSEY

MANUFACTURERS OF SANITARY WARE

Poor Chimneys

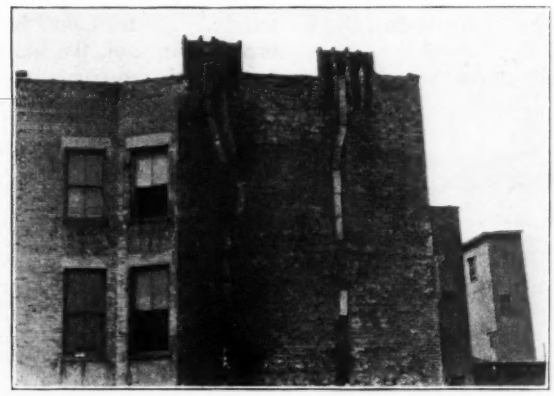


Fig. 1

By L. S. HALLIDAY

IT IS agreed by practically all boiler service men that poor chimneys account for about ninety per cent of all heating troubles. They say "you can get results in the face of all other odds if sufficient coal can properly be burned"—and that's where the chimney flue enters in the subject.

Here are some actual pictures that explain why many heating plants won't work at all and why others continue to waste fuel year after year.

And yet, chances are the mason that built these chimneys would declare that each length of tile was solidly grouted in from top to bottom and properly placed just as it should be.

Examine the views carefully and see how many tiles offset one another. Note the spaces around the outside of tiles, sufficient in some places for cats to roost. Imagine how tired the mason must have been to forget entirely to put in certain lengths of tile—or was it that he followed instructions on a job that went for "too low a price." View the dark smudge areas all up the entire side of building and then calculate how much coal this kind of construction would waste. Then again, what would happen to the insurance coverage if the Fire Underwriters knew about it—cancellation would be made immediately—they won't have any such risks.

A case like this suggests the necessity of strongly impressing on all builders and home owners how important the chimney is and that a heater can only produce results when connected to a suitable flue. Then why not talk chimney at a time when it will do some good? And that time is long before the heater is installed—months in advance of the time when Mr. User hollers for heat and can't get it—due, as he says, to a poor job—when the real fault is the old cause—"Leaky Chimney."

Heating Contractor Should Know What Is Required in a Good Chimney

Here is an interesting list of instructions that will merit some deep thought on the part of all heating men. It is what the Eastern Clay Products Association advocates be used by architects and builders when chimney specifications are being drawn up for all kinds of brick chimneys, for homes and buildings:

(1) BRICK.—(a) All brick shall be good, sound, hard, well-burned common brick. Brick shall be well wetted just before laying, if laid in dry, warm weather, or shall be perfectly dry if laid in cold weather.

(b) (If face brick or fire brick are to be used for any exposed work, stipulate the kind here, or elsewhere.)

(2) MORTAR.—(a) Mortar for all free standing chimneys (and for fireplaces, breasts or other portions thereof) and for all chimneys above roofs shall be proportioned as follows: Two bags, 200 pounds, of Portland cement and one bag, 50 pounds, of dry hydrated lime thoroughly mixed dry, three times this volume of clean sharp sand, and sufficient water. All shall be well tempered to an even color.

(b) Mortar for chimneys forming parts of walls (and for breasts, fireplaces, hearths or other portions thereof) is to be as elsewhere specified for brickwork of walls.

(3) FIRE CLAY FLUE LININGS.—(a) Fire clay flue linings shall be manufactured from suitable refractory clay, either natural or compounded, which has a softening point not lower than 1994 degrees Fahr. (Segar Cone 03) and shall be adapted to withstand high temperatures and flue gases.

(b) All flue linings shall be of the nearest stock size commercially obtainable to the sizes shown or marked on the drawings unless the same are stated to be made of special size to order for the particular installation shown.

(c) A certificate shall, if required, (or upon request), be furnished by the manufacturer stating that the flue lining supplied is in accordance with these specifications.

(4) CONSTRUCTION.—(a) Build all chimneys (chimney breasts, fireplaces, hearths, etc.) to dimensions, forms, sizes, heights and thicknesses shown on drawings.

(b) Bricks shall be laid in the best and most work-

manlike manner with full beds and full slushed joints, leaving no voids or empty spaces in the walls, and all shall be built perfectly straight and true to line on all faces.

(c) All flues shall be lined their entire height with fire clay flue linings starting at bottom of each flue above clean-out space (and at top of each smoke chamber over fireplaces) and extending 4 inches above the top course of brick. No broken flue linings shall be used. Any

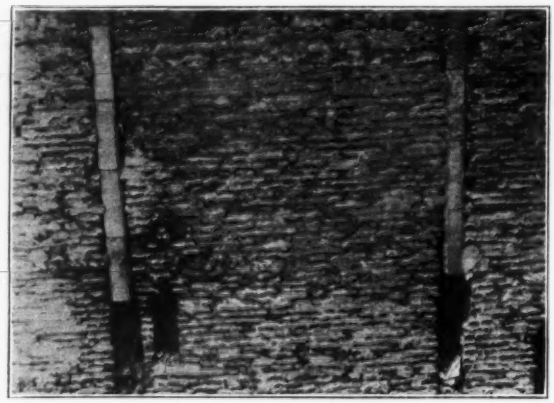


Fig. 2

change in direction shall be accomplished by carefully chipping off the ends of linings.

(d) All flues shall be independent of one another, but where the plans require that flues be built without a "withe" or dividing walls, joints of the linings shall be staggered at least 7 inches.

(e) Leave openings for all stovepipe holes and any registers where indicated or required and furnish and neatly build in fire clay flue rings of the proper sizes for all pipes entering flues.

(f) Clean-out openings shall be provided and set at bases of all flues, (except for fireplaces) each to be full width of flue. For each furnish and set a cast iron frame, well anchored, fitted with a tight closing cast iron door.

(g) Each length of lining shall be set in place and the brick laid around it and under no circumstances shall more than three courses of the brick chimney wall be laid before the flue lining is inserted.

(h) All linings shall be laid with absolutely full joints of the mortar before specified, carefully pointed and smoothed on inside. The space between flue linings and enclosing walls shall be slushed full with mortar as each course of brick is laid.

(i) In the case of any flue which is built with an offset, a bag of burlap or similar material attached to a rope and filled with excelsior or similar material tightly fitting the flue shall be inserted below the first offset and drawn up as each few section linings are installed.

(j) A wash of rich cement mortar having a slightly concave surface shall be laid on top of the chimney tapering off from 2 inches thick against the flue lining.

(k) Build in all flashings as shown and elsewhere specified, carefully construct or set any caps shown, thoroughly clean down any exposed brickwork and leave everything finished and complete.

(5) Smoke Test.—(a) Before the scaffolding is removed from around any chimneys and before any chimney walls or breasts are plastered, but not until after the mortar has seasoned, each flue shall be given a separate and thorough smoke test by the mason contractor. The tests shall be made in the presence of the mason contractor, the heating contractor and the architect or their representatives.

(b) Leaks into adjacent flues shall be especially

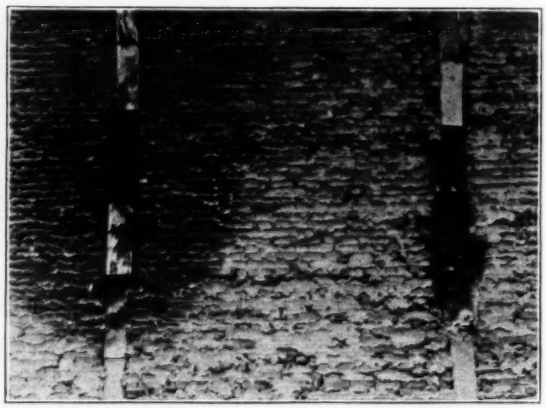


Fig. 3

looked for and not more than one flue shall be tested at one time.

(c) Any leaks which may develop shall be promptly made tight before the chimney work will be accepted as satisfactory.

Heating Results Depend Upon Good Chimney

Know and remember that these specifications are what the man that sells the tile for all flues says a chimney should be. Every good mason ought to follow these specifications. They are not arbitrary, and not drawn up by or for the pleasure of the heating man.

They're for just one purpose—to have good chimneys provided so that the best of heating results can be obtained.

The question may come up as to how to determine whether a chimney is smoke-tight or not. If it does, re-read item under "Smoke Test," it's the proof of the pudding. The top of most any chimney can be reached from the roof or with a suitable ladder—have a smoke test made on every job. It will take only a few minutes to do it—no skill required—and in most cases you'll find it will save hours of useless head scratching in the basement wondering why the job doesn't work and how you can fix it so as to get the rest of your money.

If you follow out this plan of testing each chimney, service men will vote for you anytime—because they know that the chimney is just as important to the heater as the carburetor is to your old or new automobile.

◆

This is the season of the year when fatalities are most likely to occur from running automobiles in closed garages. The carbon monoxide gas from the exhaust is such a quick acting poison that by the time the victim realizes he is ill he may not have the strength to save himself.

"DURO" DOUBLE LAVATORY FAUCET

WOLFF

TEMPERED RUNNING WATER for LAVATORIES cannot be satisfactorily secured where single faucets are used.

WOLFF J-43, 311 "DURO" DOUBLE LAVATORY FAUCET Illustrated can be substituted at slight expense and will make it possible to wash comfortably in running water which has been carefully tempered to the individual need.

WOLFF CO.
"Superior Plumbing Fixtures"
CHICAGO
Branches and Distributors in all Principal Cities

SUPERIOR PLUMBING FIXTURES

RETAIL ADVERTISING SERVICE

These pages this week carry two single column newspaper ads, one two-column newspaper ad, the usual sales letter and two publicity items. Also included is the second of the "window-grams" with instructions for its use. The cuts for the single-column ads cost 35c each or $4.20 for twelve weeks' service.

Your Children are Entitled to Health

THAT glow of ruddy health in growing boys and girls is a hard enough thing to achieve and maintain under the most favorable circumstances, much less to expect it without recognized health aids. Outdoor life alone does not keep children in a vigorous state of health, for home life, too, is an important factor, and all of the good derived from play in the open air may be counteracted by surroundings which do not measure up to the highest standards of health and sanitation. On the other hand, a home with an adequate supply of running hot water, with convenient bathing arrangements, correct house drainage, modern plumbing equipment, in a home where sanitation is paramount, you will find good health prevailing.

(In this space your Name, Telephone Number and Address)

NEWSPAPER AD No. 62

THE MODERN CRUSADE FOR GOOD HEALTH

"I am campaigning especially strong for health this week," said Harry Brown, local plumbing and heating contractor, "although that doesn't mean that I crusade for health only once a year.

"Parents sometimes think that a youngster who plays out in the open air a good deal, is bound to be healthy, but we must not forget their home life. Does that always measure up to the highest standards of health? Is every home provided with a means of furnishing an ample supply of running hot water? Is every home equipped with correct plumbing? Does every home boast the required facilities for making sanitation easy?"

SALES LETTER

No. 28

HARRY BROWN

PLUMBING & HEATING

Two Rivers, N. Y.,
January 25, 1930

Mr. Edward Jones,
Two Rivers, N. Y.
Dear Sir:

Officially, one week out of the year has been designated as Health Week, but we believe every week should be called a health week. At any rate, we are campaigning in the name of health every day, every week and every month.

Health is affected greatly by sanitation: sanitation means good plumbing, and good plumbing means quality materials, properly designed and correctly installed. The unseen system of water supply, house drainage and ventilation of drains, an up-to-date heating plant that distributes even heat, convenient bathing arrangements and plenty of hot water, all are significant factors in keeping on the royal road to health and happiness.

Since we are sanitary engineers, you will find it a wise procedure to call us in for a good old-fashioned consultation, for there are always many sidelights on plumbing and heating in relation to good health which never occur to the layman.

Very truly yours,
HARRY BROWN

HERE are two newspaper publicity items—clip them and hand them to your local paper. They represent valuable sales help.

Is Your Home Comfortable and Cheery?

Or, is your home overheated part of the time and then cold and draughty? If your heating system does not provide even and comfortable heat throughout the house you are not likely to maintain the degree of health which you might otherwise enjoy. Correct heating is vital to good health. Incorrect heating increases the liability of throat ailments and bronchial trouble, with the added disturbances that these things may induce. You owe it to your family as well as yourself to see that your home is equipped with the proper facilities for healthful warmth. Our telephone number is (insert number); call us for prompt service.

(In this space your Name, Telephone Number and Address)

NEWSPAPER AD No. 63

APPLES, HEALTH AND HEATING PLANTS

"You often hear the old saying about an apple a day keeping the doctor away," remarked Harry Brown, local plumbing and heating contractor, "but that is altogether too good to be true.

"You might eat a dozen apples every day and then, because you had a finicky heating plant that would not keep up an even temperature in your home, you might contract an insignificant cold in the chest, which could very easily lead to pneumonia, falling eyebrows and old age.

"In all candor, correct heating is a pretty important thing, something that should be viewed as an essential adjunct to good health."

Practical Advertising Helps

Good Health Through Correct Plumbing and Heating

In these days of Safety Weeks, Fire Prevention Weeks and all other sorts of weeks we want to advocate a Health Week that will last 365 days a year, instead of the one official health week now in existence. What, indeed, is the advantage in observing and promoting good health for one week? Isn't next week likely to be just as dangerous in its possibilities of infection?

Correct and adequate plumbing is a formidable weapon against disease and infection. The home which has convenient facilities for producing hot water, for bathing, for laundry and for washing dishes, is one hundred per cent safer than the home that hasn't. Add to these a heating system which maintains an even, comfortable temperature in all rooms at all times and you have a home where illness seldom gains a foothold.

(In this space your Name, Telephone Number and Address)

NEWSPAPER AD No. 64

For those of our subscribers who want to use two-column or larger ads, the illustration cut is available at 35c. Write us and tell us if you want the large one. We'll send it immediately.

ADVERTISING should be considered as a campaign —each piece of copy ought to fit into a progressive campaign. These pages, for instance, will help build brief efforts proper to the season just opening. Each piece of copy ought to be strengthened by others—as the sales letter helps the newspaper ad, and the publicity items help both.

How to handle the window display shown at right

A Window Display Suggestion—No. 10

Place one of the largest sink strainers that you have on hand in a vacant space in your window, and encircle it with several concentric rows of strainers, in each row using a smaller size fitting. The show card may be placed near the circle, wherever you deem fit.

The copy for the card can be set up by your local printer, or you can have your local sign writer or show card writer letter it by hand for you. Whichever course you follow, be sure that your card is of first-class appearance. Don't try to do the thing cheaply. Pay a dollar or two so that your card will be as good looking as any in any other store window on the street.

Sink Strainers

Prevent your drains from becoming stopped up with unsanitary sediment

Have you been neglecting to replace a worn-out or lost strainer?

WE HAVE THE SIZE

Federal Aid *for* Plumbing Schools

By R. M. STARBUCK, JR.

The Federal Government gives $7,500,000 yearly for vocational education. Plumbing schools, totaling about 100, located in various sections of the country are claiming their share of this Federal aid. It is believed that a considerable number of plumbing schools and classes, which are probably entitled to this aid, are not now in receipt of it.

FEW people in the plumbing industry are probably aware of the fact that large federal appropriations are available for assistance in establishing and maintaining plumbing schools and classes.

A knowledge of the subject should be of value to many of those who are interested in the educational side of the plumbing industry. We will try to present in as concise form as possible, a general survey of the subject, and shall quote principally from two extensive government publications.

The two publications are "Statement of Policies—Federal Board for Vocational Education,—Bulletin No. 1" and "Trade and Industrial Education,—Organization, Administration and Operation; Bulletin No. 17."

We give the titles in order that those who are interested may procure them for their own use. They may be obtained by addressing the Federal Board for Vocational Education, Washington, D. C.

In studying these publications, one of the strong impressions one gets is that our national government, through its various departments, is performing a wonderful service in every conceivable direction, for the betterment of the people.

The regrettable thing is that so much wonderful information is uncovered for use, which somehow never gains a wide circulation.

We seem to be inclined to look upon any publication that the government may put out, as a formal, cold-blooded sort of affair, but a reading of such publications as the two we have mentioned, cannot but gain for the reader, a sense of the fine spirit of helpfulness that found expression in the original enactment, and especially in its administration.

The Object of Federal Aid

The general scheme of federal aid for vocational education is stated in the following opening paragraph of the foreword of one of the publications:—

"By the provisions of the national vocational education act enacted February 23, 1917, the Federal Board for Vocational Education is charged with the duty of disbursing Federal moneys to the States for approved instruction in trade and industrial fields of less than college grade, and of promoting, in co-operation with the States, the establishment of such instruction."

The principle on which federal aid is granted to the varying States is made clear in the following paragraph:

"Federal funds must be matched by State or local funds, or by both, in this manner: "For every dollar of Federal money expended in a State, the State or its local communities, or both, must expend at least another dollar of public money for the same purpose. The State or local communities may expend the entire amount out of their own public moneys, drawing upon the Federal funds for reimbursement, not to exceed one-half of the amount expended. This requirement is to prevent the use of Federal moneys in aiding instruction maintained directly or indirectly by private funds, and to stimulate the State and local communities to support vocational education."

Without going into the detail of the gradual increase of funds available, it is sufficient to state that for the use of the States there is now available each year, nearly $7,500,000 for vocational education.

As we understand it, this amount is distributed among the various States in proportion to their urban population, that is, according to the population of all their cities.

Naturally, vocational education is mostly in demand in cities, particularly industrial cities, and is more efficiently and effectively administered in cities. Therefore, the distribution of money from the Federal Government according to urban population seems justified.

This scheme of distribution means that a larger proportion of these funds goes to the industrial States than to agricultural States, so far as vocational training is concerned.

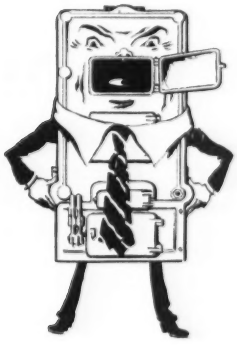
However, the same act also covers agricultural education, which is handled in an equally just manner, but with which we are not directly concerned. In this connection, the following paragraph is pertinent:—

"The guiding principle of the vocational education act —and it can not be too strongly emphasized that this principle applies to every phase of activity under that act—is that the education to be furnished must be *under public supervision and control,* and designed to train persons for useful employment, whether in agriculture, trade and industry, home economics, or commerce."

The exact purpose for which Government funds are to be applied by the States, is made clear in the following:—

"To the extent that it is subsidized by the Federal Government under the vocational education act, vocational training has reference to training for wage-earning employment. It may be given to boys and girls who,

Burnham Boilers



Show Them The Burnham Has Had Its Tonsils Out

PUBLIC speakers and boilers can't properly warm up to their work with a husky throat. No boiler can do its fiery best, with soot clinging along its flues.

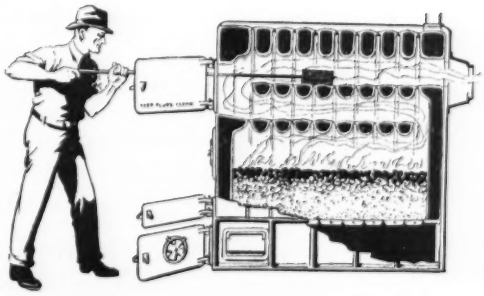
That's why the big generous flue cleanout doors on Burnham boilers are selling points to be pointed out, when you have boilers to sell.

Swing open the flue door, and show your customer how easy the flues are to get at. It makes child's play of what so often is a puzzling undertaking. You can clean a Burnham in a jiffy, and not have to clean yourself afterward.

And while you're about it, show them the Burnham long fire travel that makes its short coal bill. It's as plain as a pike staff, the moment the flue door is opened.

One big flue cleanout door lets you get at all the flues with a flue brush, in Burnham Water Tube Type Boilers. The big 36-incher has more flues and so has two cleanout doors.

Burnham Catalogue gives all the selling facts, ratings and measurements on Burnham boilers for every heating purpose.



Burnham Boiler Corporation

IRVINGTON, N. Y.

Representatives in all principal cities of the United States and Canada

THE SUCCESSFUL MAN HAS ADVERTISED CONSISTENTLY AND STEADILY, WEEK AFTER WEEK. HE HAS PLANTED THE SEEDS OF BUSINESS SUCCESS.

The plumbing and heating contractor is no exception to the rule that it pays to advertise. In fact, he should advertise more than many others.

Perhaps you have tried advertising once or twice, or several times, and decided that it didn't pay. No—advertising once or twice doesn't pay. But, advertise frequently and steadily and you will reap rich rewards. It pays.

"Domestic Engineering" recognized some time ago that the plumbing and heating contractor needed a continuous advertising service. "Domestic Engineering" acted and supplied that service—a professional service for practically no cost.

We offer you the "open sesame" to an increased volume in business. The entire campaign, newspaper ads, publicity items, educational leaflets, circulars, illustrations, sales letters and suggestions for window displays, all are planned and written for you. It is like the pot of gold at the rainbow's end, only the end of the rainbow has come to you. What more could you ask?

The cost of this service is $4.20 for twelve weeks. Every other week we send you two illustrations and a reprint of the page, which you have only to hand to your local newspaper. We simply charge you 35 cents for each cut.

Just clip off the corner of the page and mail to us attached to your letterhead, and your advertising worries cease to exist.

Retail Advertising Service

DOMESTIC ENGINEERING

1900 Prairie Avenue Chicago

having selected a vocation, desire preparation for entering it as trained wage earners; to boys and girls who, having already taken up a wage-earning employment, seek greater efficiency in that employment; or to wage earners established in their trade or occupation, who wish through increase in their efficiency and wage-earning capacity to advance to positions of responsibility."

That the Federal Government's purpose is not to take away from the State anything concerning its direction of vocational training, is shown by the following extract:—

"Under this act the Federal Government does not propose to undertake the organization and immediate direction of vocational training in the States, but does agree to make from year to year substantial financial contribution to its support. It undertakes to pay over to the States annually certain sums of money and to co-operate in fostering and promoting vocational training and the training of vocational teachers. The grants of Federal money are conditional, and the acceptance of these grants imposes upon the States specific obligations to expend the money paid over to them in accordance with the provisions of the act."

Another statement given in one of the publications, shows something of the foundation on which Government aid is based:—

"This co-operation of the States with the Federal Government is based upon four fundamental ideas: First, that vocational education being essential to the national welfare, it is a function of the National Government to stimulate the States to develop and maintain this service; second, that Federal funds are required to adjust equitably among the States the burden of providing the service; third, that since the Federal Government is vitally interested in the success of vocational education, it should, so to speak, purchase a degree of participation in this work; and, fourth, that only by creating such a relationship between the central and the local Governments can better and more uniform standards of educational efficiency be set up."

A provision that has been set up by the Federal board, and which to us seems to show that because its purpose is not to extend aid to those who are not normal in their mental development, federal aid cannot therefore be applied to vocational work in prisons, reform schools, etc., is as follows:—

"The Federal Board desires to emphasize the fact that vocational schools and classes are fostered under the vocational education act for the purpose of giving thorough vocational instruction to individuals, to the end that they may be prepared for profitable and efficient employment. This excludes instruction to backward, deficient, incorrigible, or otherwise subnormal individuals as such. Admission to any vocational class must be based upon the presumption that the individual admitted can and will profit from the instruction offered and that such instruction is such as can be taken with profit by healthy, normal individuals."

Need for Instruction

It is a well known fact to anyone who has made a study of plumbing trade schools and classes, that their great need is in two directions,—1,—the need of definite courses of instruction that will intelligently cover the exact requirements of the boys and young men that attend these classes; 2,—competent teachers.

Our own personal experience with trade schools and classes is that the entire problem of vocational education is practically set forth in these two features.

In the great work that it is performing, the Federal Board for Vocational Education is making the training of teachers one of its two principal objects, and we think it is of sufficient interest to devote a separate article to that particular subject.

It will be seen from what we have written, that in the expenditure of Federal funds for vocational education, there is a very intimate association between Federal and State boards. This is clearly shown in the following paragraphs taken from the Government publications:

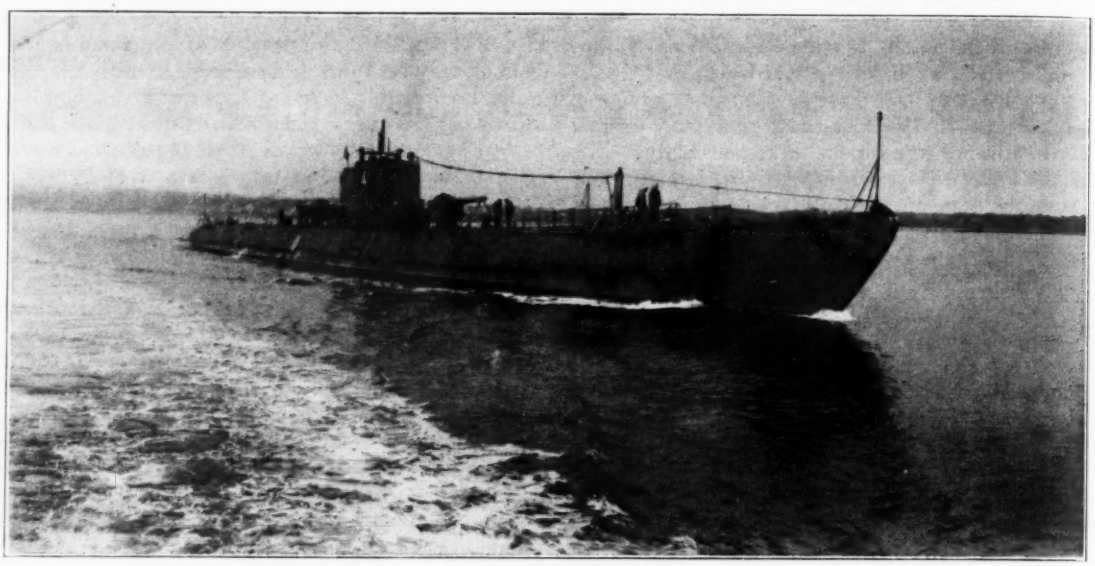
"The co-operative agreement between the Federal Government and the State is a co-operative agreement with a State and not with all States. It is proposed by a State board for vocational education for a State and is approved by the Federal board for that State only. It would be impossible to set up a single uniform plan for the country as a whole, which would take adequate account of the differing social, economic, and industrial conditions in the several States. In its administrative discretion the Federal Board must decide what arrangement it is willing to enter into with each State as a unit. It should be emphasized that the plan for co-operation is in every case offered by the State board and passed upon by the Federal Board. Authority to disapprove State plans involving reimbursements out of Federal money rests with the Federal Board, but this authority does not imply authority to dictate or initiate State plans in any particular.

"All official dealings must be between the Federal Board for Vocational Education and the State boards for vocational education. As regards compliance with the provisions of the Federal vocational education act agents of the Federal board deal with State boards or their recognized agents only, not with individual schools and institutions. The Federal Board reserves the right, of course, to inspect from time to time such schools and institutions in order to determine whether or not the State is carrying out properly the plan agreed upon. This relationship does not preclude the giving of advice to schools by the Federal board or its agents at the request of State boards or their agents.

"Under this act, then, public schools in country districts, towns and cities, State schools, and classes held in any of the schools, when controlled by trustees elected by the people, and when supervised by the proper public officials, are entitled to Federal aid so far as being under public supervision and control is concerned. Moreover, classes maintained by these public trustees, supervised and controlled by them or their appointees, taught by instructors paid from public funds, and supervised by public officials may be located in private schools or plants and federally aided, provided the private school or plant officials have neither supervision nor control over classes, and provided no part of the Federal money is paid either directly or indirectly to the support of such school or plant.

"Except for classes such as those indicated above, private schools and academies whether or not used as the public school of the community by receiving tuition from

(Continued on Page 159)



A predecessor of the V-5

The V-5
A Steam-Heated Submarine

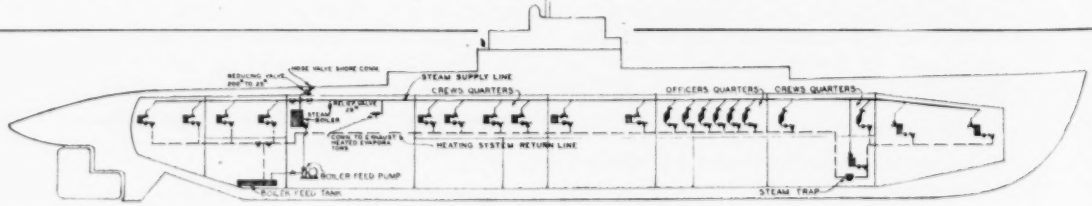
By E. W. SYLVESTER

THE cruiser submarine V-5, now nearing completion at the Navy Yard, Portsmouth, N. H., is designed for duties involving long cruises. The duration of submarine cruises and the effectiveness with which their missions are accomplished depend largely upon the physical condition of their crews. Submarine duty is no sinecure at best and any feature of design which can be incorporated in these vessels to contribute to the well-being of personnel is a very definite military asset. The steam heating system installed in the V-5 is such an asset.

The installation of steam heating systems in submarines is a comparatively recent development. Our earlier and smaller submarines are provided with electric heaters only. In order to relieve the main batteries of the heavy heating load which would be necessary to adequately heat our large cruiser submarines, steam heat has been adopted for use by these vessels when on the surface.

The sources of steam for the heating system on the V-5 are an exhaust heated evaporator for use when cruising on the surface and an oil-fired boiler for port use. In addition there is a deck connection fitted with a reducing valve through which the heating system may be connected to a shore steam supply when the vessel is lying alongside the dock. Steam supply and heating system return mains extend the length of the vessel connecting to finned type radiators which are fitted with thermostatic traps. The accompanying diagram illustrates the general layout of the system.

The exhaust heated evaporators are so arranged that the exhaust gases from the Diesel engines pass



Cruiser submarine steam heating system

through the tubes of these evaporators and the heat of these gases which would otherwise be wasted is utilized to vaporize salt water in the evaporator shells and surrounding the tubes. This vapor may either be lead to the distiller, condensed and piped direct to the ship's fresh water tanks or admitted to the steam heating system and the condensate in the system lead to the fresh water tanks. The pressure on the steam heating system when it is connected to the exhaust-heated evaporators is approximately five pounds.

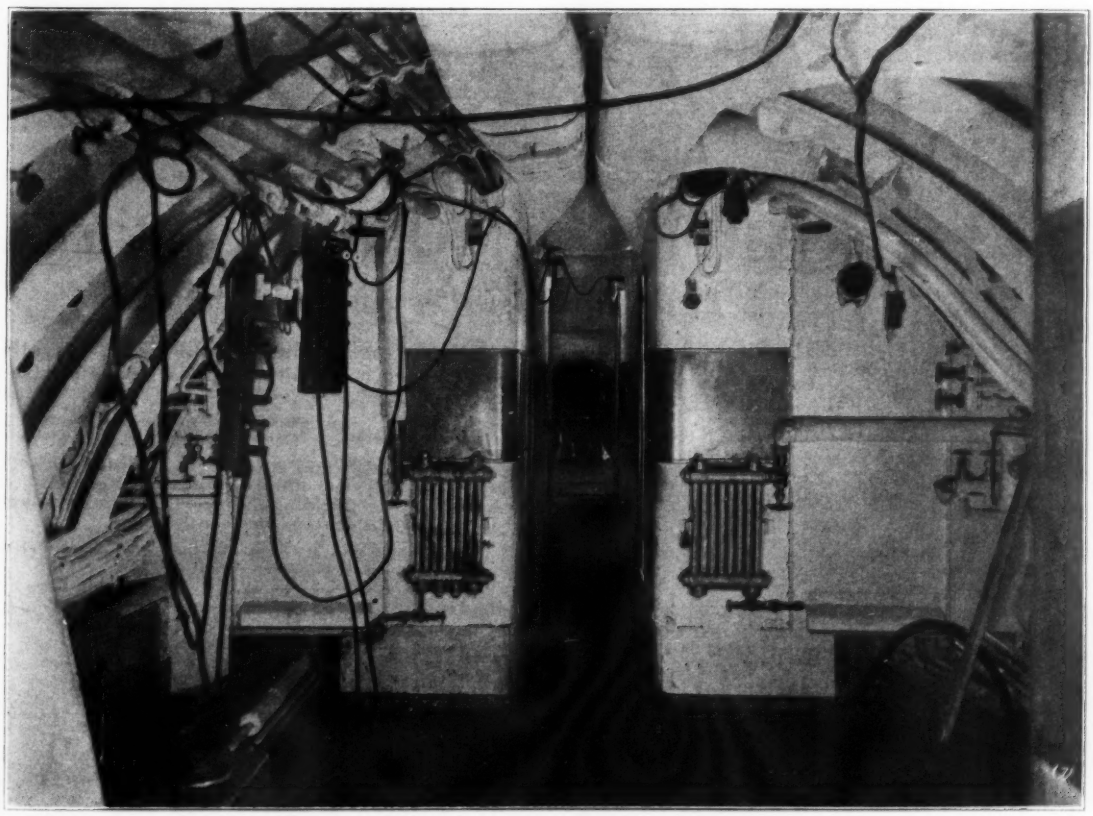
The oil-fired boiler installed in the V-5 is a heating boiler of commercial design. The boiler can be used only in port. The boiler uptake leads to a valve in the hull of the submarine and a portable smoke pipe is erected over this valve during such time as the boiler is in use. When the vessel is rigged to go to sea this smoke pipe is unshipped and the smoke pipe hull valve is closed. Pressure on the heating system when connected to the oil-fired boiler is approximately 15 lb. All steam heating system piping in the vessel is brass.

When steam heating systems were first installed in our submarines a cast aluminum radiator was developed with the idea of saving weight and space which is at all times a major consideration in submarine construction. These cast aluminum radiators have been quite satisfactory in the earlier fleet submarines but prior to the design of the heating system for the V-5 consideration was given to the further reduction in weight and space which might be realized by the use of finned type commercial radiators. Comparative tests were accordingly made of the cast aluminum radiator and several types of commercial finned radiators.

On this test a small single section brass finned radiator showed a 55 per cent superior efficiency in pounds of steam condensed per hour per pound weight of radiator over the cast aluminum radiator and a 103 per cent superior efficiency in pounds of steam condensed per hour per cubic ft. of space occupied. In view of the demonstrated superiority of the finned type radiator in the several respects, when applied to submarine heating, radiation, weight, space required, and flexibility of installation, this type of radiator has been installed in the V-5.

These tests further demonstrated the material increase in efficiency which may be expected if radiators are provided with stacks. The tests were conducted with increasing stack heights up to 64 inches. However, this feature is of but academic interest to the submarine builder as space for the provision of stacks is simply not to be had on submarines except in a very few locations.

As would naturally be expected the finned radiators showed an appreciably higher efficiency when the fins were in a vertical plane than when the fin surfaces were horizontal. This consideration can be only a guiding principle because of lack of space.



View showing cast aluminum radiators used in cruiser submarines prior to V-5

$100.00 in GOLD

HERE is an opportunity to win some easy money! Old boy "X" Liquid wants to know how many mistakes the artist has made in the picture shown and will pay cash for the information.

Contest ends March 31st, 1930, at midnight but get your answer into the mail today. All tying contestants will receive the prize tied for.

SOME EASY MONEY FOR YOU!

Find the mistakes and win a Prize

To the one who sends a list of the greatest number of "mistakes," together with the name of the magazine in which this picture appears we offer these prizes:

First Prize	$25.00	Six (6) Prizes of	$5.00 each
Three (3) Prizes of	10.00 each	Fifteen (15) Prizes of	1.00 each

Are you one of the 30,000 plumbers and steamfitters profiting with "X" Liquid? You can profit by going after all repair business aggressively and use it as a back-log for your new building business. A dollar is a dollar whether earned from repair jobs or from new contracts.

"Just pour "X" Liquid in" and watch the profits come your way. Order a Carton of "X" Liquid from your wholesaler today.

"X" LABORATORIES, 25 W. 45th St., New York, N. Y.

"X" LIQUID

Repairs Leaks in High and Low Pressure Boilers and Hot Water Heating Systems

SUPPLY NEWS

AMONG MANUFACTURERS, WHOLESALERS AND SALESMEN

Uses Airplane To Visit New Branch

The Noland Co. of Newport News, Va., is completing plans for the opening of a new branch at Hagerstown, Md., on February 1. This makes the fourteenth branch to be established by the Noland company. To facilitate reaching these various branches, L. U. Noland, president of the company, has purchased a three passenger cabin plane, which he has named the "No-Land," in which he has just returned from Hagerstown. The accompanying photograph shows the new airplane with Mr. Noland standing in the center beside it; at his left is the pilot, R. G. Herbine, and at his right, E. W. Becan, his secretary.

◆

Pincus & Schulhof Buys Paul Plumbing Co.

Pincus & Schulhof, a wholesale heating supply company at 1801 North Marshfield avenue, Chicago, Ill., on January 1, purchased the Paul Supply Co., a plumbing supply organization at 1701 Belmont avenue. The latter company has been dissolved and incorporated with the former concern under the name of Pincus & Schulhof, Inc., a partnership composed of W. N. Pincus and M. H. Schulhof.

The plant of the former Paul Supply Co. will be operated as Pincus & Schulhof, Inc., plumbing division, while the wholesale heating division will remain at 1801 North Marshfield avenue.

◆

C. A. Dunham Co. Purchases Dwyer Equipment Co.

The C. A. Dunham Co. of Chicago, Ill., has announced the purchase of the business of the Dwyer Equipment Co., also of Chicago, and has acquired the outstanding capital stock of the Dwyer company. Lawrence P. Dwyer, president and William J. Mauer, vice president of the Dwyer Equipment Co., have joined the C. A. Dunham organization as general manager and sales manager, respectively, of the unit heater division, each to be located at the general offices of the Dunham company at 450 East Ohio street.

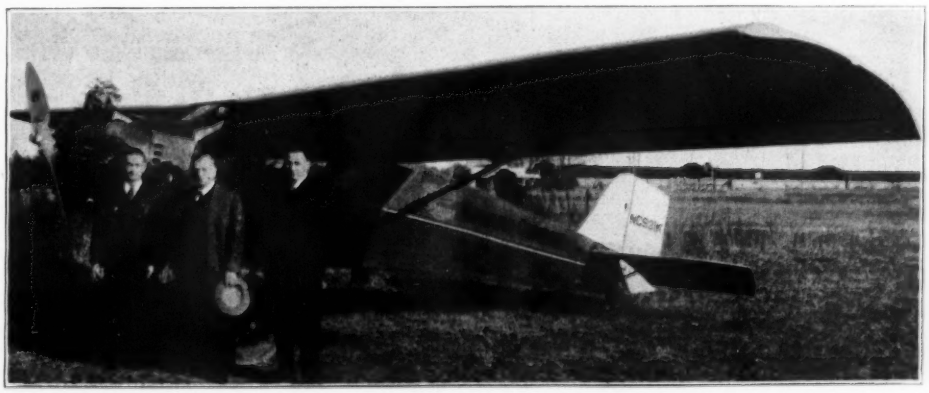
The Dwyer plant, which manufactures unit heaters and radiators, will be moved from Chicago to the newly constructed Michigan City, Ind., factory of the Dunham company. Certain brass parts will be made at the company's Marshalltown, Ia., foundry and machined at the plant in that city.

◆

Boiler and Radiator Institute Elects Officers

The Institute of Boiler and Radiator Manufacturers at a meeting on January 16 in the Hotel Astor, New York City, re-elected H. T. Richardson, Richardson & Boynton Co., New York City, chairman. C. B. Penny, Republic Radiator Co., Baltimore, Md., was made vice chairman, and the following were designated to serve on the executive committee: J. H. Waters, president of National Radiator Corp., Johnstown, Pa.; M. J. Beirn, vice president of American Radiator Co., New York City; E. E. McNair, president of United States Radiator Corp., Detroit, Mich.; Stanley M. De Long, president of Pierce, Butler & Pierce Mfg. Corp., New York City; Isadore Weil, president of Weil-McLain Co., Michigan City, Ind.; R. C. Cook, vice president of The Thatcher Co., Newark, N. J., and Dr. F. T. Nason, president of Columbia Radiator Co., McKeesport, Pa.

F. W. Herendeen, Geneva, N. Y., who was re-elected secretary and treasurer, together with both the chairman and the vice chairman, are included in the committee ex officio. In view of ample indications that the institute is established on a sound basis, Colonel William J. Donovan withdrew as its counsel. W. J. Matthews, attorney of New York City and Chicago, was selected as his successor. The Boynton Furnace Co., New York City, became a participant member.



The "No-Land," belonging to L. U. Noland of the Noland Co., Newport News, Va.

National Radiator Corp. Elects John H. Waters President

John H. Waters, chairman of the board of the National Radiator Corp., Johnstown, Pa., was elected president of the corporation on January 7, as well as retaining the board chairmanship. He succeeds Grant Pierce, who has retired.

Another important change made by the corporation is the immediate removal of the executive and general sales offices from New York City to Johnstown where they are being consolidated with the other offices previously located there.

Charles L. Crouse, vice president and assistant general manager of sales, has been appointed general manager of sales in charge of all merchandising activities.

Directors of the corporation are as follows: Edwin C. Andrews, Rudolph B. Flershem, both of Buffalo, N. Y.; Herman E. Baumer, Charles L. Crouse, John H. Waters, Robert S. Waters, Samuel B. Waters, Johnstown; Ellery S. James, Francis F. Randolph, Paul Sims, George Urquhart, Robert V. White, all of New York City; John W. Watson, Upper Montclair, N. J.

In addition to Mr. Waters, the officers are as follows: vice presidents, Samuel B. Waters, Robert Wray Porter, Robert S. Waters, Charles L. Crouse; secretary and treasurer, J. L. Price; assistant secretary and treasurer, Cyrus E. Reed.

◆

Crane Co. to Erect Building in Jacksonville, Fla.

Crane Co. of Chicago, Ill., has let the contract to George D. Auchter Construction Co., Jacksonville, Fla., for the construction of a new building to house the Crane Co. branch in that city. Marsh & Saxelbye, Jacksonville, are the architects.

The new structure will be three stories and basement. The first story will be utilized for showrooms and for the city sales department; the second floor will contain the offices of the factory branch, while the third floor will be used for storage purposes.

◆

Trane Co. Moves Chicago Offices

The Trane Co., whose general offices and factory are located in La Crosse, Wis., has moved its Chicago offices from 844 Rush street to 919 North Michigan avenue.

Death of Robert Rom

Robert Rom, president of the Robert Rom Co., Milwaukee, Wis., died Wednesday, January 15, at St. Joseph's Hospital in that city, of heart trouble. He had been in the plumbing, heating and mill supply business for 57 years.

Mr. Rom, who was in his 75th year, established the Robert Rom Co. in 1889, and was active in the concern until his illness a few weeks ago. His home was at Elm Grove, a suburb of Milwaukee. Besides his activity in the plumbing field Mr. Rom was a director of the National Bank of Commerce, a member of the Wisconsin Club and a former participant of the old Sharpshooters club contests. He retained his love of sport during his later years by hunting. Besides his wife Mr. Rom is survived by three sons, all of whom are connected with the Rom company. A brother, Emil, is also a member of the concern.

◆

Machinery Company Organizes Western Division

The Worthington Machinery Corporation of California, Ltd., with headquarters at Los Angeles and San Francisco, Calif., has been organized as of January 2, to serve the interests of the Worthington Pump and Machinery Corp. of New York City in the California territory. The new corporation will take over the sales and engineering staff and warehouse facilities of the Worthington Co., Inc., in California.

H. D. Cornell, who has been president of the Worthington Machinery Corp. of Oklahoma, will be president of the new California corporation. George W. Hawkins, who has been director of sales for the parent company, will go to California as vice president.

◆

Buys Oscar C. Andersen & Co.

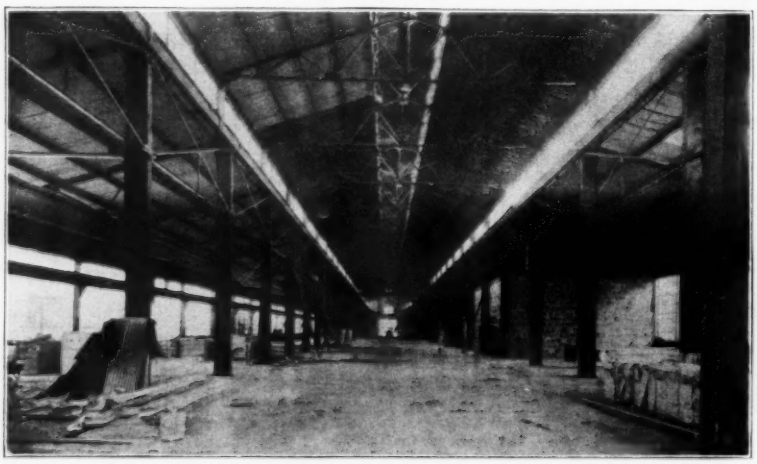
H. D. Stannard, Jr., has purchased the firm of Oscar C. Andersen & Co., manufacturers' representatives, 1146 West Lake street, Chicago, effective January 1. The new name of the firm is H. D. Stannard, Jr. Mr. Stannard had been associated with the Oscar C. Andersen concern for a number of years.

The company represents the Beaton & Cadwell Mfg. Co., New Britain, Conn., the Cleveland Brass Mfg. Co., Cleveland, Ohio, and the Plomb Tool Co., Los Angeles, Calif.

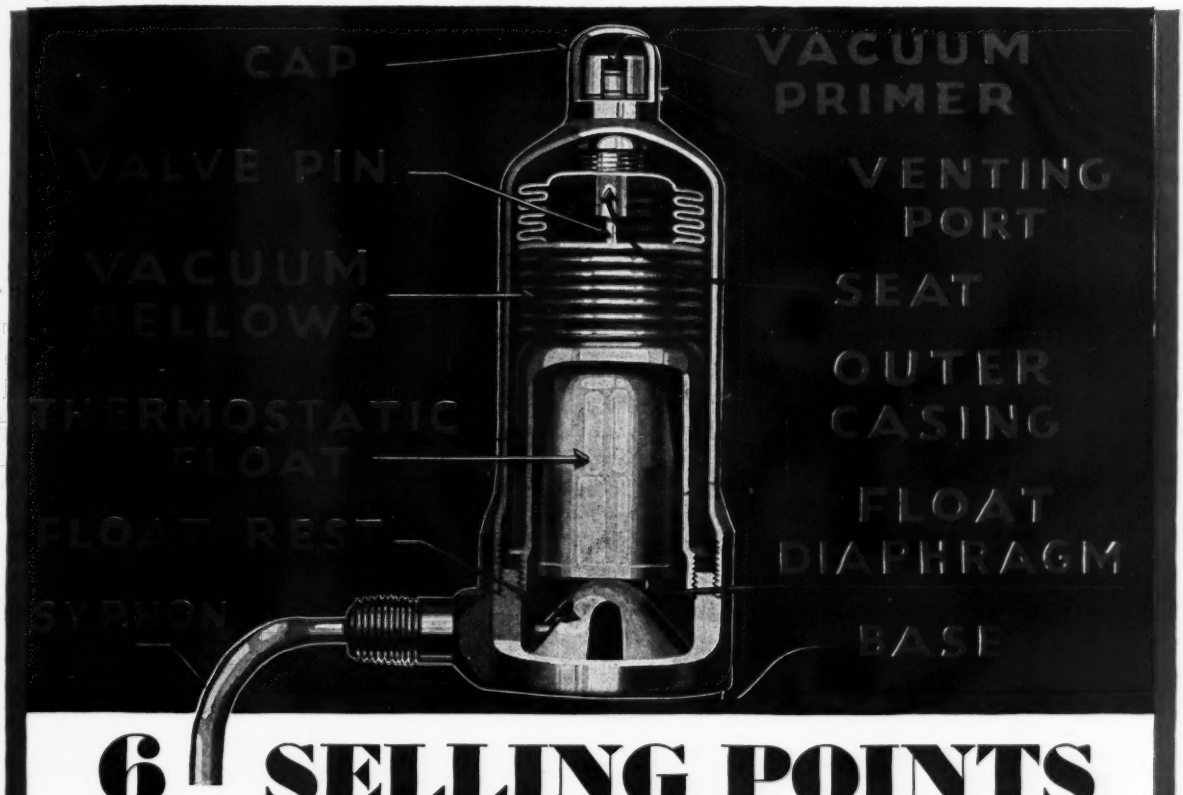
◆

Peerless Unit Ventilation Co. Moves Into New Plant

The Peerless Unit Ventilation Co., Inc., Bridgeport, Conn., has moved into its new plant, 750-788 Union avenue, Bridgeport, Conn. This building is of the monitor type of brick and steel construction, 480′ x 115′, with an additional boiler house. The new plant has a railroad siding and loading platform. In addition to the manufacturing plant and office the company has a well-equipped experimental laboratory.



New plant of Peerless Unit Ventilation Co.



6 SELLING POINTS

1. "Holds the Vacuum" because of the new application of principles—dependable triple-action construction.
2. New attractive design—beautifully chromium plated.
3. Reasonably priced.
4. Saves fuel—gives more heat.
5. Written guarantee for 5 years.
6. Attractively packaged for quick sale.

Prospects a-Plenty

In YOUR city are many inefficient, wasteful one-pipe steam heating systems that would be instantly corrected if equipped with these new Dole Vacuum Valves. Owners will welcome your telling them how fuel can be saved and comfort increased quickly and inexpensively.

You Be the Judge—Order Six Today

Order sufficient Dole Vacuum Valves No. 2-B (and 6-B for the mains) to make a fair test on any balky one-pipe steam system. Check results carefully—you will be surprised by their positive performance. Then you will have added confidence in campaigning your community for profitable business. The low price and advantageous discounts on this unusual valve will surprise and please you. Write NOW for complete information.

New Dole Vacuum Valve No. 2-B

Patent Applied For

New Application of Principles

First, the vacuum primer, then a bellows, then a thermostatic float—this triple-action insures a positive performance. Definitely "holds the vacuum," assuring "sealed comfort." Radiators stay hot for many hours after the fire is banked.

New Design—Beautiful Chromium Plated Finish

Its good appearance suggests its splendid performance. A new, very attractive design beautifully finished in highly polished, non-tarnishable chromium plating. Rich, different, distinctive.

Automatic, Foolproof, Non-Adjustable

Facts of performance—100% automatic, non-adjustable, cannot leak water, foolproof, seat self-cleaning, syphon instantly drains away condensation, vacuum primer a sure starter, bellows design positively assures a vacuum, definitely more heat from less fuel, fewer firings, elimination of "radiator static." Quick, constant, economical heat.

Fine Quality—Attractively Packaged

This new Dole Vacuum Valve is manufactured from the best materials. Precision workmanship throughout. Fully tested and guaranteed for five years. The valves are individually packed in smart, distinctive containers. Attractive display box holds 12. Buy a box NOW!

THE DOLE VALVE CO.

1913-35 Carroll Avenue, CHICAGO

"..WITH A NET PROFIT OF $365.00!"

An interesting SPEED HEATER report that will interest you!

One of our Sales Cooperators wrote this paragraph in a recent sales report:

"Having previously found out through the local Heating and Piping Association that a certain contractor was most aggressive and busiest all year around, I called on him and took one of his men to the plant the next day. In fifteen minutes a complete price for the SPEED HEATER system installed was given, amounting to $900.00, with a net profit of $365.00 to the contractor."

SPEED HEATERS are priced for contractors . . . not only can you make a good margin of profit on the product, you can make money on the installation and still be low!

Why not send in the coupon for the literature and our proposition? And ask for one of our men to call and get acquainted!

THE PRICE IS WAY DOWN

COUPON

B. F. STURTEVANT CO.
Hyde Park, Boston, Mass.

Kindly mail me SPEED HEATER Blue Book, also copy of "Tips on Heater Selling."

☐ I'd like to see a Sales Cooperator when he's in the district.

Name of Company.....

Street Address.....

City.....*State*.....

B. F. STURTEVANT COMPANY

Plants and Offices at: Berkeley, Cal. ◂ Camden, N. J. ◂ Framingham, Mass. Galt, Ontario ◂ Hyde Park, Mass. ◂ Sturtevant, Wis.

Branch Offices at: Atlanta; Boston; Buffalo; Camden; Charlotte; Chicago; Cincinnati; Cleveland; Dallas; Denver; Detroit; Hartford; Indianapolis; Kansas City; Los Angeles; Milwaukee; Minneapolis; Newark; New York; Omaha; Pittsburgh; Portland; Rochester; St. Louis; San Francisco; Seattle; Washington, D. C. *Canadian Offices at:* Toronto; Montreal and Galt. ◂ *Canadian Representative:* Kipp Kelly, Ltd., Winnipeg

Also Agents in Principal Foreign Countries

Sturtevant (REG. U. S. PAT. OFF.)

SPEED HEATERS "More Heat Less Steam"

Manufacturers' Association Adopts Code of Ethics

Responding to the general movement within the plumbing and heating industries to define fair trade practices as an effective effort toward business improvement, the National Association of Fittings Manufacturers, a voluntary organization of producers of cast iron and malleable fittings, has adopted and is promulgating a code of ethics which became effective December 15, 1929. This action is a culmination of the Trade Practice Conference held in Pittsburgh last May under the guidance of the Federal Trade Commission and the trade practice rules for the industries which have the approval of the commission.

The association, organized in June, 1929, includes in its membership practically all manufacturers of malleable and cast iron fittings and its officers are: President, H. C. Stockham, Stockham Pipe & Fittings Co., Birmingham, Ala.; vice president, Russell Bontecou, Grinnell Co., Inc., Providence, R. I.; treasurer, J. S. Mattimore, Walworth Co., New York City; commissioner, George V. Denny, 1743 Graybar building, New York City; counsel, Colonel William J. Donovan, 41 Broad street, New York City.

The code of ethics in its entirety is as follows:

Code of Ethics

I. The making of incomplete, ambiguous and deceptive contracts for the sale of fittings, provides a medium for making unfair price discriminations, induces fraud and repudiation of such contracts, gives rise to disputes, and disturbs stability in business operation, to the consequent injury of the industry and the general public.

Therefore, it is declared that all contracts for the sale of fittings shall contain a definite and true statement of price, quantity, terms of payment, place of delivery, date, name of jobber and/or contractor and all other items necessary to form a complete contract; further, that all contracts so entered into shall be performed in letter and in spirit.

It is further declared, that in order to carry out the above declaration, all invoices shall contain in full statement of all the facts necessary to make such an invoice a full and complete record of the transaction represented on the face thereof.

II. The payment or allowance of secret rebates, refunds, credits or unearned discounts, whether in the form of money or otherwise, or the extension of services or privileges to certain purchasers not extended to all purchasers under like terms and conditions is an unfair trade practice.

III. Discrimination in price of fittings between purchasers of the same class, not including discrimination in price on account of the difference in grade, quantity or quality of the products sold, or which makes only due allowance for difference in cost of selling and transportation or discrimination in price in the same or different communities not made in good faith to meet competition, where the effect of such discrimination may be to substantially lessen competition or tend to create a monopoly, is an unfair trade practice. Provided, however, that nothing in this rule shall be construed to prevent the publication and use of a special quantity price applicable to a definite quantity of goods which are placed in one order and at the option of the shipper are moved as one shipment; And provided further, That nothing herein contained shall prevent persons, firms or corporations engaged in selling fittings in commerce from selecting their own customers in bona fide transactions.

IV. The acceptance of orders for large quantities of fittings by manufacturers, except for a specific building operation, and then making small deliveries at quantity prices for the purpose and with the effect of discriminating between different purchasers, is an unfair trade practice.

V. The inducing, or attempting to induce, the breach of a contract between a competitor and his customer, is an unfair trade practice.

VI. The sale of fittings below the cost of production for the purpose of injuring a competitor or with the effect of substantially lessening competition is an unfair trade practice.

VII. The variable practice on the part of sellers of requiring purchasers in some instances to pay published freight and/or cartage charges and in other instances of assuming such charges causes unfair discrimination.

VIII. Quoting a total price on any schedule of fittings which does not show unit prices generally conceals confidential preferentials and results, in many instances, in fraud in the substitution of products of inferior quality, grade, style or size, which is detrimental to the interest of the public and the industry and any addition or deduction on any other basis than the unit price shown is price discrimination and is condemned by the industry.

IX. Contracts, either written or oral, are business obligations which should be performed in letter and in spirit.

The repudiation of contracts by sellers on a rising market, or by buyers on a declining market, is equally reprehensible. Such action shatters confidence, induces violent fluctuations in price, destroys stability in business operations to the consequent injury of the industry as well as the general public, and is condemned by the industry.

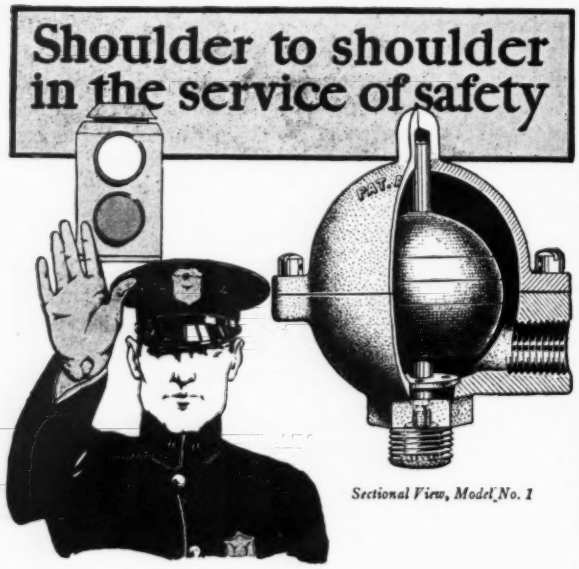
Contracts should be subject to no cancellation except for legal cause or by mutual consent.

X. The following practices affecting the seller's product are declared to be unfair methods of competition and are condemned by the industry:

1. The marking, branding, or failure to mark or brand the product, for the purpose or with the effect of misleading or deceiving purchasers, or prospective purchasers, with respect to the quantity, quality, size, grade or substance of the product purchased.

2. The publication, or circulation of any false, misleading, or deceptive statement, by way of advertisement or otherwise, concerning the grade, quality, quantity, character, composition or origin of the product.

3. The sale, or offer to sell any product with intent to deceive purchasers or prospective purchasers with respect to the quantity, quality, size, grade or substance of such product.



Sectional View, Model No. 1

Red Signals . . . and Red Tops

A GREEN light suddenly changes to red. A whistle shrilly blasts. A policeman holds up a warning hand in the service of safety.

The red light is a symbol of safety. So is the red top of a Red Top Relief Valve. It identifies a relief valve which protects "closed" domestic hot water supply systems . . . forestalls explosions and other ruptures caused by rising pressures where heaters are accidentally left turned on.

A Model No. 1 Red Top is the type for this service. Simple in construction and operation, it works on the gravity principle, and relieves at 50, 75, 100 or 130 lbs.

So reliable is its operation that it bears the approval of the Underwriters' Laboratories, Inc., America's foremost testing organization. So, too, does the Red Top Relief Valve, Model No. 2, which relieves at 30 lbs., and is the basis of an efficient and economical system of hot water heating.

Send the coupon for further data.

NEPTUNE METER COMPANY
50 E. 42nd Street **New York City, N. Y.**
Branch Offices in Principal Cities

Red Top
Relief Valve

NEPTUNE METER CO. D.E. 1-25-30
50 East 42nd Street, New York, N. Y.

Please send me a copy of the new edition of your folder, "Protection," which describes Red Top Relief Valves and their operation.

Name.....
Street.....
City.....
State.....

Atlanta Wholesalers Are Hosts to Contractors

Five Atlanta wholesale houses were hosts to the local heating, plumbing and ventilating contractors at a recent noonday banquet held at the Piedmont hotel. The meeting assembled one hundred guests, its purpose being to discuss fair trade practice rules as set up by the federal trade commission. C. B. Horne of Horne & Wilson, and others led in the discussion. Atlanta wholesale firms represented included Horne & Wilson, Noland Co., Walker Co., Crane Co., Chicago, and the Plumbing and Heating Supply Co.

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Mill Supply Committee Adds Member

The mill supply committee of the National Pipe & Supplies Association, under the chairmanship of H. R. Ireland of the Industrial Supply Co., Terre Haute, Ind., has added a new member to its ranks, in the person of C. W. Beckner of the West Virginia-Kentucky Hardware & Supply Co., Huntington, W. Va.

Personal Mention

D. W. BURGOON has been elected vice president and general manager of the Yeomans Bros. Co., Chicago, Ill. Mr. Burgoon will be in charge of all operations including, as in the past, general supervision of sales.

W. G. R. BRAEMER, M. E., widely known air conditioning specialist of many years experience, has recently been appointed by The Niagara Blower Co., Buffalo, N. Y., to direct its Philadelphia, Pa., office located in the La Fayette building.

JOHN P. FRIEL, manufacturers' representative of Philadelphia, Pa., has recently been appointed sales representative for the Van Pottery Co. of Trenton, N. J., covering the Philadelphia district. Mr. Friel also represents the United-Oberndorf Corp., Cleveland, Ohio; Para Rubber Co., Newark, N. J.; and the Pottstown Pipe Products Co. of Pottstown, Pa.

A. M. Farrier

, A. M. FARRIER who has heretofore lived in New York has just been appointed General Sales Manager of the Peerless Unit Ventilation Co., Inc., Bridgeport, Conn., with headquarters at the home office. Mr. Farrier has a successful record of accomplishment in national sales management. He was for some years vice-president in charge of a division of Thomas A. Edison, Inc., for seven years vice-president of the Easton Car & Construction Co., and while with the M. H. Treadwell Co., of New York, Easton, Pa., and Midland, Pa., handled a wide range of heating and coal and ash handling equipment, as well as other special devices. He is an engineer, as well as an executive.

JOHN LAMONT of the M. S. Little Mfg. Co., of Hartford, Conn., has been transferred to Chicago, Ill., to give

his entire time to the interests of that company in the Middle West. He will work out of the office of HOWARD E. CRUM, JR., who has represented the Little company in that section for the past nine years, and will cooperate with Mr. Crum for some time. Mr. Crum will continue as representative for the Frank Wiedeman Co., Dick Brothers, Inc., of Reading, Pa., and D. D. Wessels & Sons Co. of Detroit, Mich.

GEORGE H. PALM, for the past six years engineer with the new development division of the Yellow Coach and Mfg. Co. of Pontiac, Mich., has taken a similar position with the Young Radiator Co., Racine, Wis.

Retail Sales Plan Used by One Wholesaler

Because of the expansion of the direct-to-you houses, and their growing menace to the present plan of distribution by the manufacturers, wholesalers and plumbers, we are submitting the following sales plan to our customers:

Let us say that within a 50 mile radius of our warehouse, including the best cities in that section, some nationally known direct-to-you concerns have established, or have taken leases to establish, a warehouse and showrooms where they will sell plumbing and heating supplies direct to the consumer without any consideration or commission for the plumbing trade.

This we consider a very serious condition, as during the year 1927, 20 per cent of the actual output of the plumbing and heating supplies was distributed through the direct-to-you house. During 1929 we know that this percentage has been increased, although we have no definite statistics to date. Some of the direct-to-you houses in the metropolis of this territory are doing as large a business as any concern in the territory.

We believe that to combat this competition, we must sell a higher quality fixture, otherwise, the extremely low prices which are being quoted on competitive material will eliminate any possible profit on the part of our plumbers.

May I say here, that under our present plan of sales through the plumber in our showroom, we sell 50 per cent of high priced closet combinations, 45 per cent of medium priced closet combinations, and only 5 per cent of the competitive type.

We are now remodelling our showroom to give a more comprehensive and complete display of sinks, tubs, lavatories, closets, and heating equipment, etc., so that the consumer may see the exact fixture he plans to buy rather than pick it out from a catalog or picture book. We intend to beautify our showroom so that when a consumer does see the display, it will create a desire for the material.

We have also made arrangements for advertising in the leading newspaper of this territory, with half page and quarter page ads, one to three days a week, advertising the material which we are all interested to sell, and quoting definite resale consumer prices in our ads in the same manner that the direct-to-you houses are now doing.

We also propose to have a very attractive hand catalog showing a complete line of plumbing and heating fixtures. We only propose to show fixtures in these catalogs, as our plan is only to develop and create a demand for better bathrooms and heating equipment. In this way we feel that the high grade plumber and steamfitter will benefit, as the purchaser of quality fixtures will always look to the reliable dealer to install them.

Because of these facts which we have mentioned above, we have formulated the following plan which we are now submitting to you:

Our Retail Sales Plan

"1.—Supposing a consumer calls at our show room and selects a list of material which would cost the plumber, say $100.00. We would on the present plan, quote a price to him of $133.00, but we could not take his order, under our present plan, and therefore, he ofttimes goes to a direct-to-you house, who quotes him a lower price and obtains the order, although in most cases, they do substitute inferior quality of merchandise.

"We feel that the most important part of a sale is the ability to close that sale. On our present plan we do not have the opportunity to close because we do not know by whom the goods are to be installed, just what commission that particular customer would ask on the job, etc.

"We believe that the profit is made up of

$100.00—plumber's cost
20%—plumber's profit
13%—retail expense

which covers the time spent in calling on customers, in selling the job, and taking them around to showrooms, advertising expense, cost of writing letters, and various items with which we are all familiar.

"We propose to take the plumber's cost of $100.00, add 20 per cent for the plumber's profit, and then add 13 per cent for retail expense, which percentage we will reserve for our extra expnse in the new sales plan, providing we make the sale unassisted in any way by the plumber.

"If, however, the plumber sends in or personally brings in the customer, the entire 33 1/3 per cent will be paid to him.

"We propose to sell this material at the above resale price for cash to the consumer and deliver the goods to him without any question in regard to the plumber—in other words, we intend to disassociate the public mind from the fact that we are working in conjunction with the plumber and reserving a commission for him; however, the plumber's profit will be a constant proposition with us—in other words, all prices which we quote we guarantee will positively show a 20 per cent mark up for the plumber.

"In no case, regardless of our customer's desire,

(Continued on Page 119)

Four interesting problems in

Multiple Discounts

By HENRY DAVIDSON

IT is a surprising thing how few men, even keen business men, are well posted in the manipulation of multiple discounts, that is, discounts of more than a single element. Such a discount as 65-10 per cent on 55-5-2½ per cent we allude to as multiple discounts, to distinguish them from the simple discount of a single term, such as 45 per cent.

On page 54 of the June 15 issue we presented four typical problems in the use of multiple discounts, and we want to discuss them with you.

The first problem really resolved itself into the question of difference between these three series of discounts—75-10-5 per cent, 5-10-75 per cent and 75-5-10 per cent. You will note that each of the three series is made up of the same three separate discounts, but arranged in different order. Unless you had studied such discounts as these, there is no doubt that you would at once select 75-10-5 per cent as by far the most favorable discount.

We have used this problem as a sort of mathematical puzzle, and have never yet seen a man unacquainted with it, who failed to select this series as the most favorable for him to buy goods on.

As a matter of fact, all three series are of exactly the same value. We shall not be surprised if you do not want to take our word for it. If you are incredulous, just work the three series out, and see what results you obtain.

The first problem called for the foregoing three series of discounts to be applied to the sum of $1053.65. The correct result in each of the three computations is $225.22.

A number of replies to the problems were received. In most instances some mistake in working the example out caused the one who sent in the results to miss the real point of the problem.

We will take just one of the replies, for instance the one coming from A. F. G. of Rochester, N. Y. Out of the three, he got $225.22 only once. In one computation he made a mistake in multiplication which produced a result of $223.32, and in the third case he forgot to apply the third discount, and got $250.24. These two little slip-ups, common to every one of us, deprived A. F. G. of the real meat of this problem.

Another contributor of solutions for these problems in discounts, "stubbed his toe" in the same way on the second problem. This was a man who signed himself "Interested Reader," Boston, Mass.

The second problem was similar to the first. Its purpose was to find which of four discounts gave the best "buy" on a bill of goods amounting to $673.37. These discounts were, viz.:—65-10-7½-2½ per cent, 2½-7½-10-65 per cent, 7½-2½-10-65 per cent and 10-2½-65-7½ per cent.

Results Should Be Identical

The above named gentleman came through with four different results, viz.:—$201.62; $179.35; $199.90 and $178.87.

All four results should have been identical, and according to our reckoning, the correct net result after applying each series of discounts, is $191.30.

"Interested Reader" knew perfectly well how to figure this problem out, but there was a careless mistake in each computation that brought a wrong result, and deprived him also, of the satisfaction of working out for himself the fact that the net result of a series of four different discounts taken in any order whatever is exactly the same.

These two problems were given in order to show that in the case of multiple discounts, their value is neither increased nor decreased by changing the order of the individual discounts. This fact is true, whether the series of discounts is made up of two, six or a dozen separate discounts. Thus, 90-50-10-5 per cent is exactly the same value to you as 5-10-50-90 per cent or any other combination of these four separate discounts.

This may be a good thing to bear in mind in your buying.

The third problem is different, and it seemed to bother almost everyone who sent in returns. As a matter of fact, very few attempted its solution.

Figuring List

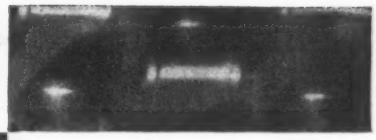
It sometimes happens that a business man will know the rate of discount, and the net amount, but will for some reason not know the list on which the discount would apply. In the third problem the discount given was 25-10-10 per cent, and the net amount $365.42. What must the list be that would give this net amount at the given discount? To solve this problem we must work backwards. Applying the discount of 25-10-10 per cent to $1.00, produces a net amount of .6075,—this means that for every dollar of the original amount, .6075 is left after the above discount has been applied. Therefore, to find how many dollars constituted the original list amount, divide the full net amount by the net amount on $1.00. Thus, in this present example, $365.42÷.6075= $601.52. Then $601.52 is the original list before the discount was applied. If you want to prove the correctness of this method, apply the discount 25-10-10 to $601.52. You will come out with $365.42, which proves the problem.

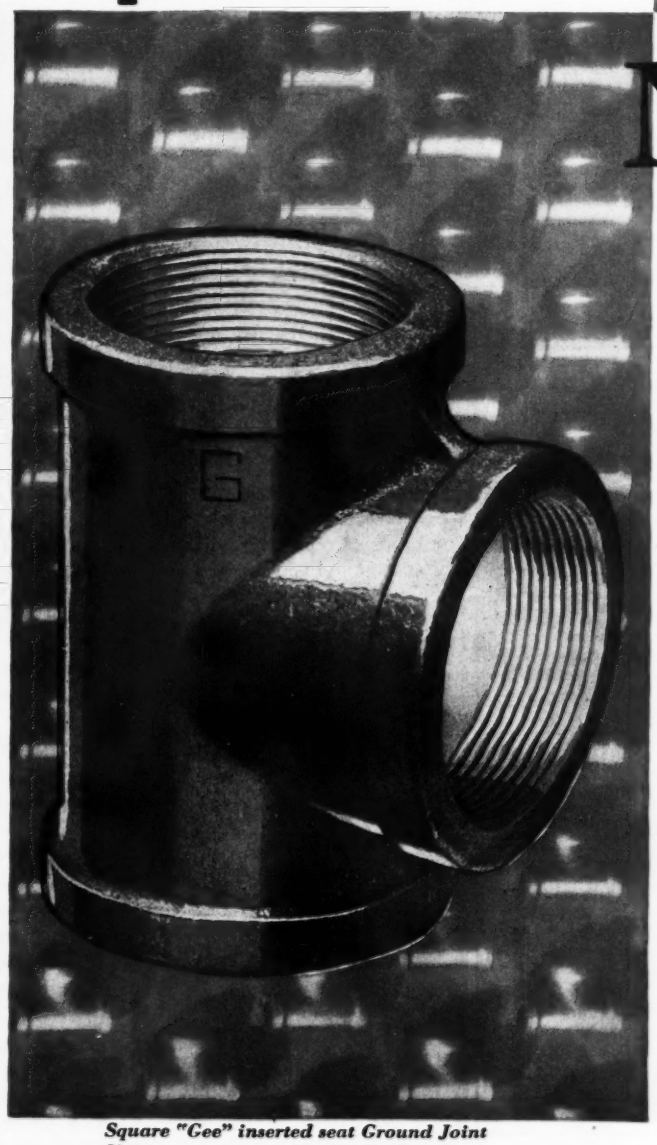
The fourth and final problem was the simplest of all —what is the net amount of $1435.16 at 47½-10-5-2½ per cent? The answer that we get is $628.10.

Explanation of a Series of Discounts

Probably nearly every reader knows full well how to work out a series of discounts. For the sake of those few to whom such a computation is a mysterious thing, we

Full Speed Ahead





Square "Gee" inserted seat Ground Joint Unions are approved by the Underwriters.

NO "slow orders" with Square "Gees" on the job. No hunting for a fitting that fits. No fumbling for a start. No slipping wrenches.

Square "Gees" know their place and go there in a hurry. Reamed and recessed to give the full depth, clean cut threads an airplane start, they grab hold surely and quickly. And the husky beading makes your wrench welcome.

Every Square "Gee" is alike . . . free from flaws, true in size and accurately threaded. Grabler foundry methods . . . molds go to the metal, preventing cold shots . . . and multiple inspection makes sure of that.

Costing no more than ordinary fittings, Square "Gees" are profit makers. They cut down labor hours and do a better job.

The GRABLER MFG. *Co.*
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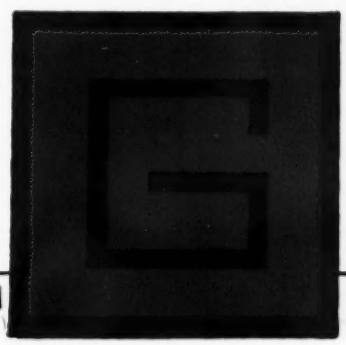
GRABLER-REPUBLIC, *Inc.*
4900 Euclid Bldg., Cleveland, Ohio
Factory: Cleveland. *Warehouses:* New York, Chicago, San Francisco, Los Angeles

YOUR FITTING PROBLEM IS SOLVED WHEN YOU SAY SQUARE "GEES"

SQUARE Pipe



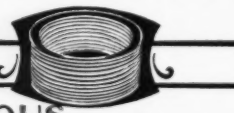
"GEE" Fittings

MALLEABLE, CAST IRON DRAINAGE, BRASS

SINCE 1895
Paragon SELF-CLOSING FAUCETS
with renewable seats

SMOOTH ball-bearing action. Patented "Samson" Lock, which makes Paragon handles easiest to adjust without special tools. Longer wear — better action. A wide variety of bodies and handles. Write for folder on the complete line.
Through your Wholesaler.

The CENTRAL BRASS Mfg. Co.
PARAGON DIVISION CLEVELAND O.



The FAMOUS Sylphon TRADE MARK BELLOWS

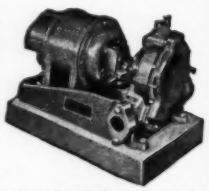
Original—Genuine

Sylphon Temperature Regulators, Pressure Regulators and Expansion Joints are in almost universal use, in thousands of buildings, in nearly all industrial plants, in great power plants, and in the homes of the people.

The Fulton Sylphon Company, Desk D Knoxville, Tenn., U. S. A.

JENNINGS Centrifugal Pumps are simple in construction and easy to take care of. Motor and pump are on the same shaft. There are no bearings in the pump casing. Only one stuffing box. Merely unbolting the pump head gives ready access to the interior. Impeller is removable without disturbing packing.

Supplied in capacities up to 1200 g.p.m., heads up to 250 ft. For circulating hot and cold water, boosting city water pressure to supply top stories, aiding circulation in hot water heating systems, circulating water to and from swimming pools. Write for Bulletin 52.



Jennings Centrifugal Pump

NASH ENGINEERING CO.
41 Wilson Road So. Norwalk Conn.

Jennings Pumps

EXPAN HUB
SOIL PIPE

Stops leaking joints caused by the contraction and expansion of soil, waste and vent lines, and the natural settlement of buildings. Ask for it by name. You'll know it by its Orange Band. Your wholesaler has it.

Manufactured and Sold by

ALABAMA PIPE COMPANY Anniston, Ala.
342 Madison Ave. New York N. Y. 122 S. Michigan Ave. Chicago, Ill. 1749 Sacramento St., San Francisco, Calif.

STRINGER BROS. CO., Inc. Gadsden, Ala.
1100 W. 38th St. Chicago Ill. 138 Sidney St. Cambridge, Mass.

will show by a simple example how this is done.

If the above named four term discount is applied to $1.00, we shall know how many cents out of one dollar will be left. It stands to reason that what is true of a single dollar would be also true of any larger amount. Therefore, if we find the net amount of $1.00 and multiply $1435.16 by that amount, we shall get the net amount on that sum at the discount mentioned. To get the net amount on $1.00, figure as follows:

$1.00×.525 (net at 47½%)=.525
.525×.90 (net at 10%)=.4725
.4725×.95 (net at 5%)=.44887
.44887×.975 (net at 2½%)=.43765 (net on $1.00 at 47½-10-5-2½%)

Having found the net amount on $1.00, the next and final step is to multiply $1435.16 by that amount, as follows:

$1435.16×.43765=$628.10 (Answer)

We hope that we have made these things clear and shall be glad to go into them further whenever help is needed.

Progress in Research in the A. S. H. V. E. Laboratory

(Continued from Page 50)

as desired. The radiator, *I*, was used only in a few experiments made to demonstrate that the data collected with the condenser applied to the case when direct radiation was used. The extended section of the riser *CB* and the radiator *M* were used only to prove that their presence had no effect on the capacity of the branch under study.

When the branch was studied as a one-pipe connection, the condensate from the condenser or radiator was returned through the branch and riser and was collected and weighed at *L*, due account being taken of the condensation from the risers *AC* and of riser *CB* and the radiator *M* when they were in use. When the branch was studied as a two-pipe connection, the condensation was returned through the separate return line, *JK*, and weighed.

In any given arrangement of the branch, steam was supplied through it to the condenser first at a rate well below its capacity. The condensation returning, which is a measure of the steam passing through the branch was weighed in order to determine the hourly rate of flow, and at the same time the pressure drop through the branch was measured by a pressure gauge. In subsequent experiments with the same arrangement of the branch the rate of condensation was increased by steps until the ultimate capacity of the branch was reached or until an increase in pressure drop through the branch or an increased condensating capacity of the radiator or condenser did not result in an increase in the flow of steam through the branch studied. The rate of condensation at which noise began to occur in the branch was also noted. The results of such a series of experiments on a 1¼-inch branch gave the curve *B*, Fig. 2, where 143 sq. ft. of radiation (see scale to the right) is a measure of the maximum capacity of the branch with no valve and 1¼-inch fittings and the section of

branch *DE*, Fig. 1, having a pitch of 3½ ins. in 10 ft.

Plotted Results Show Point of Maximum Capacity

Point *Y*, on curve *B*, Fig. 2, indicates the maximum capacity or 127 sq. ft. of the same branch but without noise. Such a series of experiments was made with a similar branch arrangement, but with different pitches of the pipe, *DE*, Fig. 1, in order to establish the capacity of this branch with different pitches. Similar series of experiments were made with larger fittings in order to establish whether the limit of capacity of the branch was affected by the pipe or by the fittings. Curves *C* and *A*, Fig. 2, gave the capacity-pressure drop relationship for the same conditions as curve *B* except that in *C*, a 1¼-inch angle valve was used, and in *A*, all 1¼-inch fittings were replaced by 1½-inch fittings. The curves indicate that for this particular pitch of the branch, *C*, or 120 sq. ft., was the capacity of the 1¼-inch angle valve used, *B*, or 143 sq. ft., was the capacity of the 1¼-inch fittings and *A*, or 160 sq. ft., was the capacity of the pipe *DE* with a pitch of 3.5 inches in 10 ft. Similar series of experiments were made with different lengths of the branch *DE*.

Using the maximum values from many curves similar to those in Fig. 2, a set of curves, Fig. 3, was developed in which curve *B* gives the maximum capacity with noise of a 1¼-inch branch with 1¼-inch fittings but no valve, for various pitches. The solid line part of the curve is for a 10-ft. branch and the broken line part is for a 5-ft. branch. Curves *D* and *E* give the maximum capacity without noise of the same 5- and 10-ft. branches which gave curve *B* for maximum capacity with noise.

Apply Practical Factor to Research Results

It is not desirable usually to apply the results of research just as found by experiments made under ideal conditions. This is true in installing a steam heating system. In practice some contingent factor which may not have been foreseen may result in a decreased capacity of the pipe or increased heating load resulting in a noisy or otherwise unsatisfactory system. The curves *F* and *G* based upon 20 per cent of the values in curves *D* and *E* are recommended for use in laying out steam heating systems.

The technical results, conclusions, and recommendations resulting from the study of the capacity of pipe in one- and two-pipe radiator branches were published in the January 11 issue of DOMESTIC ENGINEERING, and the reader is directed to the complete report for detail facts.

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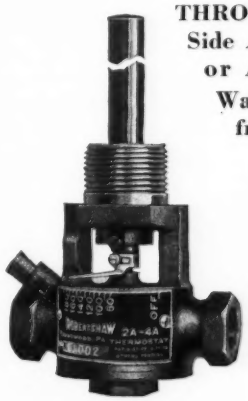
A Correction

In our last issue in the story on the formation of the Institute of Manufacturers of Vitreous China Plumbing Fixtures it was erroneously stated that John C. Keene, secretary of the above mentioned organization and also secretary of the Plumbers Woodwork Institute, was secretary of the Master Plumbers Association of Pittsburgh, Pa., prior to joining the Plumbing and Heating Industries Bureau.

Mr. Keene was with the bureau prior to assuming his present duties, but at no time was he connected with the Pittsburgh association. John H. Keane is secretary of the Pittsburgh organization.

There's a

ROBERTSHAW
THERMOSTAT
for
***every* requirement**

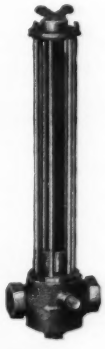


THROTTLING TYPE for Side Arm Water Heaters or Automatic Storage Water Heaters. All sizes from ⅜ to 2 inches.

Robertshaw Throttling Type Water Heater Thermostats are fully covered in CIRCULAR FORM R-4. Write for it!

SNAP-ACTION TYPE For Storage Water Heaters and Furnace and Boiler Temperature Control. Gas Pipe sizes from ½ to 2½ inches.

Robertshaw Snap-Action Thermostats are illustrated and described in CIRCULAR FORM R-1. Write for it!



Number 2GV for single unit circulator and garage heaters. Easily installed. Attractive in appearance. Gas pipe sizes from ½ to 1 inch. Robertshaw circulator and garage heater thermostats are fully described in number 2GV circular. Write for it! Write for any or all of the above circulars—they're free—no obligation involved.

ROBERTSHAW THERMOSTAT CO.
Youngwood, Pa.

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"Have you noticed the new name they have given our old favorite 'Etna' Pipe, Jim? Now they call it 'Spang'."

"Yes, Bill, the manufacturers decided to call it 'Spang' to identify this famous pipe more closely with their firm name. I don't blame them—it's a mighty good name and a pipe to be proud of."

"You said a mouthful, Jim. I've worked with it for years and have always found it satisfactory. Easy to work with—cuts easy and threads easy. The couplings are always cleanly threaded too."

SPANG, CHALFANT & CO., INC.

General Offices: **Clark Building, Pittsburgh, Pa.**

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SPANG

Welded Steel Pipe

THE TRADE

NEWS FOR PLUMBING AND HEATING CONTRACTORS

National Committee Studies Dealership Plan

The committee authorized at the annual convention of the National Association of Master Plumbers last June met in Detroit on January 16 to study the authorized dealership plan recommended by the Michigan State Association of Master Plumbers. This committee, consisting of G. W. Frank, Buffalo, N. Y., chairman; Arthur Lahr, Lafayette, Ind., and E. Maurer, Cleveland, Ohio, discussed all phases of the plan with other representatives of the industry. Its report and judgment of the plan will be submitted to President Quinn of the national association at a later date.

◆

Kansas City Association Elects Officers

The Association of Master Plumbers of Kansas City, Mo., has elected as its officers for the ensuing year the following members: A. D. Jacobson, president; Frank Spears, vice president; W. F. Coakley, secretary; and E. A. Kuebler, treasurer.

◆

Iowa Changes Convention Dates

The Iowa Association of Master Plumbers has just announced that the dates for its annual convention have been changed to Monday and Tuesday, January 27 and 28. The Iowa convention is to be held in Sioux City and the officers anticipate a large attendance at this year's meeting.

M. J. Orr of Sioux City is president of the Iowa state association, H. A. Rynearson of Waterloo, vice president, R. G. Jeffords of Fort Dodge, secretary and E. D. Wernentin of Davenport, treasurer. It was previously planned to hold the convention on January 28 and 29.

◆

Michigan Association Announces Convention Date

The Michigan State Association of Master Plumbers has announced that its next annual convention will be held at Jackson, Mich., March 25, 26 and 27, with headquarters at the Hotel Hayes.

◆

Los Angeles Association Has New Headquarters

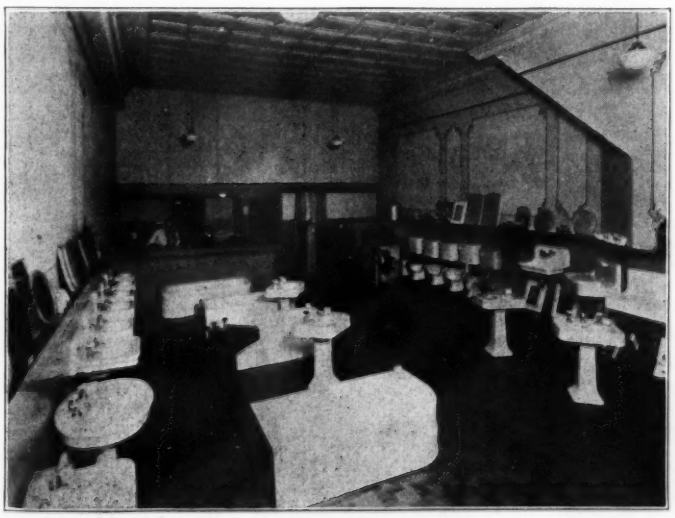
H. H. Boynton of Los Angeles, Calif., secretary for the Western Supply Association, the Plumbing Supply Association, the Los Angeles Master Plumbers Credit Association, and also secretary for the regional office of the Plumbing and Heating Institute, has moved his office to the Printing Center building, in that city. This concentrates the secretarial offices of these different associations into one office, which is expected to contribute materially to the conduct of business as well as being a big advantage to the industry in Los Angeles.

◆

Queens Masters Elect Officers

The election of officers of the Master Plumbers' Association of Queens, New York City, at a meeting held January 8 in the Knights of Columbus building, Jamaica, L. I., resulted in William E. Foley being

Attractive Showroom in Great Falls, Mont.



THE photograph at the left shows the attractive display room maintained by the Kane Company, plumbing and heating contractors, at 306 First avenue, South, Great Falls, Mont. The room is well lighted and the fixtures and other materials are arranged in such a way as to make it easy for the customer to draw comparisons.

made president; George Harrington, first vice president; Joseph R. Mittasch, second vice president; L. J. Redmond, recording and financial secretary; Charles R. Budrie, marshal, and Joseph S. McNamara, sergeant-at-arms. John F. Rogers, who has been treasurer for many years, was re-elected to that office.

◆

Manhattan Association Elects Officers

The Association of Master Plumbers, Manhattan Branch, New York City, has elected the following officers for the 1930 season: Joseph F. Peck, president; Richard Anderson, vice president; Albert A. Duguid, secretary; and Thomas J. Cummins, treasurer.

◆

Buffalo Association Holds Meeting

The Master Plumbers' Association of Buffalo, N. Y., dedicated its first meeting of the year, on January 9, to Past President William MacGamwell. After the meeting, a luncheon and smoker was held with entertainment, featuring a one piece band, provided through the courtesy of the Walworth Co. of Boston, Mass.

◆

North and West Side Masters Elect Officers

The North and West Side Master Plumbers' Pleasure Club of Chicago, at a recent meeting, elected the following officers: Perry F. Larsen, president; R. J. Nelson, vice president; H. H. Diedesch, financial secretary; F. W. Sorge, recording secretary; Henry Breyer, treasurer, and John Blair, sergeant-at-arms. F. W. Sorge, L. P. Markowski and R. J. Nelson were elected to the board of directors.

The club will hold its annual entertainment in the form of a dinner dance early in February, which will be the 35th anniversary of the club.

◆

Passaic Association Installs New Officers

Practically the entire membership of the Master Plumbers' Association of Passaic, N. J., attended the dinner meeting on January 8 at the Passaic Y. M. C. A. at which the newly elected officers of the organization were installed.

A. C. Krieger, president of the New Jersey state association, conducted the formality which made Allan J. Blair, president; Harry Vogel, vice president; S. J. Dinnino, treasurer; A. Levenson, financial secretary; T. Taylor, secretary, and Frank Scangerello, sergeant-at-arms. Roy J. Schleich and Harry Pruzansky were installed as trustees. In his acceptance speech President Blair outlined his plans for the ensuing year and asked for the support of the entire organization. He named his committees which included the full membership.

George R. Aldous, an honorary member and secretary of the Passaic chamber of commerce, was toastmaster and on behalf of the master plumbers presented Samuel Schneider, retiring president, with a diamond ring. In the course of the latter's appreciative expressions he indicated his intention to continue his wholehearted efforts for the association. Mr. Aldous, addressing the meeting later, urged the mas-

Members of the Conference Committee N. A. M. P.

Frederick W. Quinter

William Loftis

F. C. Kuetemeyer

Walter C. Williams

Francis C. Dorsey

ter plumbers to increase their individual activities in civic affairs and thus demonstrate to the public that they are interested in the city's welfare.

State President Krieger spoke on association work generally, emphasizing that good local organizations are requisites to the proper functioning of the state and the national bodies. Among the things with which the state officers are now engaged President Krieger enumerated the state code, the state lien law and the matter of the national executives seeking a conference with the government concerning trade practice rules. This last matter, he said, has been taken up with the national body.

Mr. Schleich, who is also a former president, in a discussion of business conditions expressed himself as being strongly in favor of a proposal for the establishment in Passaic of a small claims' court where judicial action may be had involving bills of $50 or less in amount. In urging this effort, Mr. Schleich pointed to the success with which similar court procedures are working in Clifton and other neighboring cities. Others who spoke briefly were L. Schneider and L. Felthammer. Toastmaster Aldous, after saying a few words of praise in behalf of the trade press gave each of the representatives present the opportunity of making a few remarks.

◆

San Francisco Plumber Again Heads Health Board

Frank J. Klimm, plumbing contractor of San Francisco, was again chosen president of the municipal board of health, to which office he has been returned every year since 1926. Mr. Klimm first entered public life in 1910 when Mayor McCarthy appointed him a member of the health board.

◆

Akron Association Elects Officers

The Master Plumbers' Association of Akron, Ohio, at a recent bi-monthly meeting, elected its officers for the ensuing year. Joseph R. Forbs was chosen as president, succeeding Oliver Hoffman; W. E. Brenner was elected vice president; W. P. Loeffler, secretary; and Henry Steigner, treasurer.

◆

Memphis Association Elects Officers

The Memphis Association of Master Plumbers, Inc., of Memphis, Tenn., recently elected its officers for the year 1930. George R. Tucker was made president; Richard Rhodes, vice president; J. L. Peebles, secretary; and Gustav Limberg, treasurer.

The new board of managers consists of W. J. Ludeke, F. Pritchard, B. L. Tutt, James Conroy and George Heisler.

◆

Atlanta Inspector Retires

James A. G. Beach, former chief plumbing inspector for Atlanta, Ga., for the last 35 years, has retired on a pension and has moved to Miami, Fla., for his health. Mr. Beach retired from service after having established a record of never having been absent nor late during his term of service.

The Master Plumbers, Piping and Heating Contractors' Association of Atlanta designated its secretary, W. R. Puckett, to make the trip to Miami and present Mr. Beach with a handsome loving cup in appreciation of

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SHERWOOD Ball Cocks
wherever continuous, quiet operation at economical cost are the requirements .....

For any bathroom job, from the most modest home to the high priced residence and for stores, offices, institutions, schools, etc. Sherwood Ball Cocks offer the most economical means of assuring complete tank operation satisfaction

They mean first of all, leakproof operation, regardless of the water pressure and they mean operation that is free from all whistling and gurgling.

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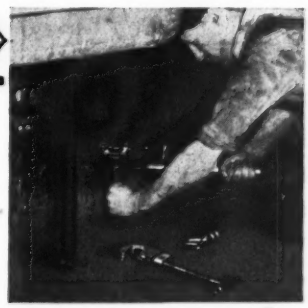

These tools pay profits in time saved.

There are times when an ARMSTRONG BROS. Reversible Ratchet Stock, or a 3-wheel pipe cutter are indispensable. Places where it is almost impossible to work with ordinary pipe tools. One of these stocks will thread a pipe end that projects but an inch,—can be used where the handle can be moved thru an arc of only a few inches.

ARMSTRONG BROS.
Reversible Ratchet Stock

All working parts well protected from sand and grit. Take all standard dies from ⅛" to 2".

Every user of pipe tools should have Catalog P-10. It shows, describes, gives sizes and prices of ARMSTRONG BROS. Better Pipe Tools. The most complete line of tools for work on pipe up to two-inch — Vises, Cutters and Tongs up to largest sizes.

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ARMSTRONG BROS.
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his services. The wholesalers of Atlanta made an additional gift at the same time of $225.00 gold.

◆

New Bedford Association Elects Officers

The Master Plumbers' Association of New Bedford and Vicinity, Inc., New Bedford, Mass., recently elected the following officers for 1930: F. Butler, president; Harry Mulberry, vice president; Mark E. Greenleaf, treasurer; and Walter P. Bailey, secretary.

◆

Southern California Inspectors Form Association

The plumbing inspectors of Southern California have formed an association, and various committees have been appointed to work in harmony with the standing committees of the California State Association of Master Plumbers, for standard examination laws for both journeymen and master plumbers, and also a standard plumbing code.

◆

Contractors Hold Dinner in Charlotte, N. C.

The Charlotte Plumbing and Heating Contractors' Association of Charlotte, N. C., held a dinner in conjunction with the local Chamber of Commerce, on Thursday night, January 9. The meeting, which assembled one hundred guests, had as its principal speaker Hugh P. Baker, manager of the trade association department of the United States Chamber of Commerce. Clarence O. Kuester of Charlotte, served as toastmaster. Mr. Baker discussed general business conditions in relation to the plumbing and heating industry.

A. S. H. V. E. Completes Program for 1930 Meeting

The American Society of Heating and Ventilating Engineers has completed arrangements for the program of its thirty-sixth annual meeting and exposition, which will be held at the Benjamin Franklin hotel and the Commercial museum in Philadelphia, Pa., on January 27, 28, 29, 30 and 31. Morning sessions will be held at the Benjamin Franklin hotel and afternoon sessions will take place in the Commercial museum, where the International Heating and Ventilating Exposition will be held under the auspices of the society.

The complete program of the meeting follows:

Monday, January 27

10:30 a. m.—Reception of guests and registration, Benjamin Franklin hotel.
Time set aside for visitors to accept invitation of the heating and ventilating manufacturers of Philadelphia and vicinity to inspect manufacturing processes and plants.
2:30 p. m.—Council meeting.
4:00 p. m.—Ladies' tea.
6:00 p. m.—Ladies' dinner.
8:00 p. m.—Heating and Ventilating Exposition Commercial Museum.
9:00 p m.—Theatre party for ladies.
11:30 p. m.—Buffet supper.

Tuesday, January 28

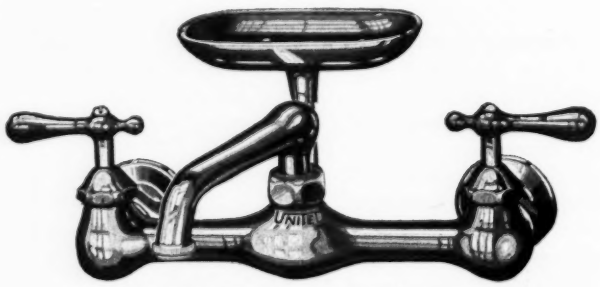
Benjamin Franklin Hotel

9:00 a. m.—Reception and registration.
9:30 a. m.—Greeting by John Cassell, honorary chairman.
Response by President Thornton Lewis.
Introduction of R. C. Bolsinger, general chairman.
Report of tellers.
"Power from Process and Space Heating Steam," L. A. Harding.
Report of council.

Graceful Design

This United Combination is regularly furnished with Metal Dish and Metal Handles. It can also be furnished with China Handles and China Dish. Its beauty is rapidly commanding a leading position in the opinion of master plumbers, architects and owners because of its

ENDURING QUALITY
DEPENDABLE SERVICE
ATTRACTIVENESS



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No. 631 with Male Adjustable Flange

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Report of committee on increase in membership, C. W. Farrar.

12:00 p. m.—Ladies' luncheon.

12:30 p. m.—Luncheon for society officers and authors of papers.

2:30 p. m.—Ladies' tea-bridge.

Commercial Museum

2:00 p. m.—Report of finance committee, W. T. Jones.

"Pressure Difference Across Windows in Relation to Wind Velocity," by J. E. Emswiler and W. C. Randall.

"Air Infiltration Through Various Types of Brick Wall Construction," by G. L. Larson, D. W. Nelson and C. Braatz.

6:30 p. m.—Dinner meeting committee on research, Benjamin Franklin hotel.

8:00 p. m.—Heating and Ventilating Exposition for members and ladies, Commercial museum.

Wednesday, January 29

Benjamin Franklin Hotel

10:00 a. m.—Report of the committee on research.

Report of research director.

"Surface Transmission Coefficients," by Rowley, Algren and Blackshaw.

"Absorption of Solar Radiation in Its Relation to the Temperature, Color, Angle and Other Characteristics of the Absorbing Surface," by F. C. Houghten and Carl Gutberlet.

"Preventing Condensation on Interior Building Surfaces," by Paul D. Close.

12:30 p. m.—Ladies' luncheon at the Benjamin Franklin hotel.

2:00 p. m.—Ladies' matinee or motor trip to Valley Forge.

Commercial Museum

2:00 p. m.—Code for testing and rating unit heaters.

"Method of Testing Unit Heaters Suitable for Field Use," by L. S. O'Bannon.

"Measurement of the Flow of Air Through Registers and Grilles," by Prof. L. E. Davies.

4:00 p. m.—Ladies' tea, Benjamin Franklin hotel.

6:30 p. m.—Past presidents' dinner.

Dinner for wives of past presidents.

8:00 p. m.—Heating and Ventilating Show, Commercial museum.

Thursday, January 30

Benjamin Franklin Hotel

9:30 a. m.—Report of continuing committee on the rating and testing of low pressure steam heating boilers.

"The Rating of Heating Boilers by Their Physical Characteristics," by C. E. Bronson.

Report of committee on garage ventilation.

Report of committee on natural ventilation.

"Some Studies of Airation of Garages," by W. C. Randall and L. W. Leonhard.

11:30 a. m.—Breakfast-bridge for ladies, Benjamin Franklin hotel.

Commercial Museum

2:00 p. m.—Report of guide publication committee.

"Pipe Sizes for Hot Water Heating Systems," by Elmer Smith.

"Panel Warming," by L. W. Fowler.

4:00 p. m.—Ladies' tea, Benjamin Franklin hotel.

7:00 p. m.—Annual banquet and dance, Benjamin Franklin hotel.

Friday, January 31

Benjamin Franklin Hotel

9:30 a. m.—Amendments to by-laws.

Installation of officers.

"Air Conditioning of the Halls of Congress," by L. L. Lewis and A. E. Stacey.

"Tests of Disc and Propeller Fans," by A. I. Brown.

Resolutions.

Shopping tour for ladies.

Benjamin Franklin Hotel

1:30 p. m.—Council meeting.

Those in charge of the general arrangements are: General chairman, R. C. Bolsinger; honorary chairman, John D. Cassell; finance chairman, Lee Nusbaum; Ladies' entertainment chairman, M. C. Gillett; banquet chairman, A. J. Nesbitt; publicity and transportation chairman, F. D. Mensing; hostesses, Mrs. Thornton Lewis, Mrs. M. C. Gillett, Mrs. W. G. Culbert, Mrs. M. F. Blankin, Mrs. R. C. Bolsinger, Mrs. Chas. G. Binder, Miss Edgar, Mrs. A. H. McDade, Miss Theodora Jellett, Mrs. William Miller, Mrs. A. J. Nesbitt, Mrs. Lee Nusbaum, Mrs. H. J. Walther and Mrs. Warren Webster, Jr.

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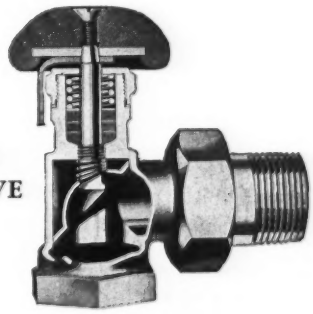
ARCO PACKLESS VALVES

ARCO PACKLESS HOT WATER VALVE No. 901



NO longer is it necessary for you to install ordinary hot water valves in order to keep the price down. In fact, when you install No. 901 Arco Packless hot water valves you actually save money for yourself without raising the bid. The difference in cost between the cheapest valves and No. 901 is much less than the usual cost of a return trip to repack ordinary valves before the job is turned over to the owner.

No. 901 Arco Packless Hot Water Valves have these 3 outstanding advantages:

1. Packless—complete protection against leaks without repacking.

2. Swinging plate—acts as a cleaning tool, impossible for the valve to stick.

3. Equalizing — adjustable stop, makes it possible to balance the job after installation without expensive pipe changes.

STANDARDIZE ON No. 901 ARCO PACKLESS —One of a complete Packless line for Steam, Water, Vapor or Vacuum, made in Angle, Corner and Gate patterns.

AMERICAN RADIATOR COMPANY

Makers of a complete line of guaranteed heating accessories

National Association Convention Plans Progressing

The convention and exposition committee of the National Association of Master Plumbers met recently in Boston, Mass., and succeeded in making a great amount of progress in the preparations for the coming national convention, which will be held in Boston at the Mechanics' building on June 24, 25 and 26, 1930. The committee, consisting of national association officers, master plumbers from various sections of the United States, and representatives of leading manufacturers in plumbing and affiliated lines, met at the Hotel Statler Friday, January 3, and was in session until late that evening, as well as on the following day.

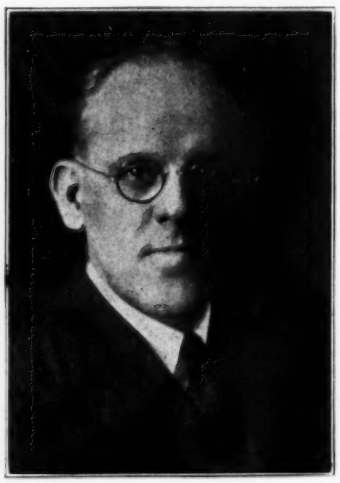
When Chairman Donoghue of the committee called the meeting to order, the following were present: National Vice President George H. Drake of Buffalo and National Secretary M. J. Feeney of Philadelphia; Past National President Thomas F. Nolan of Albany, N. Y.; National Director Wallace T. Wordell of Taunton, Mass.; State President William N. Chesnut of Upper Montclair, N. J.; C. W. Wanger of Philadelphia; A. M. Maddock of Trenton, N. J.; W. K. Glen of Chicago; E. J. Hartman of Pittsburgh, representing Charles B. Nash; Joseph A. Maynard of Waltham, Mass.; State President Richard T. Thatcher of Fairhaven, Mass.; Robert A. LaCentra, Edward C. Kelly and Assistant Chairman James G. Gillespie of Boston; Walter J. Kohler, Jr. of Kohler, Wis.; Russell G. Creviston of Chicago; E. L. Flentje, manager of the Plumbing and Heating Industries Bureau, Chicago; Albert B. Dibble of New Haven, Conn., chairman of the educational committee of the national association; Andrew J. Curtin of Medford, Mass., chairman of the exhibits committee; and R. H. Mattison of Boston, executive secretary of the committee.

The members gave a great deal of time to the discussion of the program of business and entertainment for the convention and exposition in Boston next June. Recognizing that the primary purpose of the national convention is the transaction of association business and the presentation to each member of information, ideas and enthusiasm which make his attendance a profitable investment of time and money, the committee was most careful that the entertainment features did not conflict with the serious side of the program. The display of plumbing, heating and allied products, which already is being referred to as a "Million Dollar Plumbing Exposition," will in itself furnish a most interesting and instructive form of entertainment to the master plumbers, presenting, as it does, the most up-to-date products in his line to be found in the entire world. This exposition, held under the same roof with the convention meetings, will be patronized, it is expected, by more master plumbers than ever before in the history of the organization.

The exhibit will open Monday, June 23, at 10 a. m. and the day will be devoted to a preview of the displays with special features to attract architects, builders, financiers and property owners of Boston and New England, as well as those members of the master plumbers' association who are then in the city. On this same day, it is expected there will be a meeting of the board of directors of the national association and possibly a meeting of the executive board of the Plumbing and Heating Industries Bureau.

On the evening of Monday, June 23, the special activities of the Boston entertainment committee will start. There will be a reception and ball at the Hotel Statler in charge of the Boston group. Following the past national presidents' and directors dinner at 7 o'clock that evening, the national officers and their wives will receive the delegates and guests in the assembly of the Hotel Statler ballroom from

Maney J. Feeney



Wallace T. Wordell

8:30 to 9:30 p. m. There will be a dance in the ballroom following the reception and lasting until one o'clock Tuesday morning.

The opening session of the national convention will be held at Mechanics' building at 10:30 o'clock Tuesday, June 24, after a parade from the Hotel Statler to the convention hall, participated in by delegates, guests and wives. The line of march will lead through Copley Square and, as the distance is less than a mile, it is anticipated that every master plumber and guest in the city will be in line.

A unique and attractive feature, the details of which have not yet been made public will be presented at the opening session of the convention at 10:30 o'clock. This will precede the addresses of welcome from the governor, the mayor and other prominent speakers with the customary convention program following.

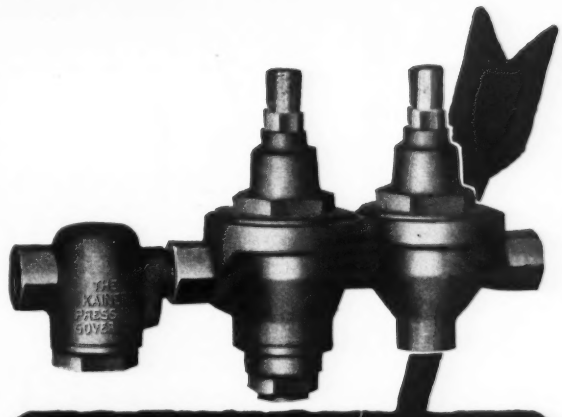
National Secretary Feeney announced Friday that President John A. Quinn has decided to hold single sessions daily at the Boston convention, which plan was inaugurated at Buffalo last year and found to be of great benefit to the exhibitors, as well as to the members who thus had time to participate in the program of the special educational committee and the exposition features.

While the convention work is going on at Mechanics' building, Tuesday, there will be a luncheon for the ladies, held at the Hotel Statler at 12:30 o'clock, and in charge of the members of the ladies' auxiliary in Boston and vicinity. Following the luncheon, a shopping tour will be arranged for the visiting ladies, the details of which will probably be announced later by the local auxiliary members.

The convention session at Mechanics' building will not adjourn until 2:30 p. m., but if, at any interval, any of the delegates get hungry, there will be a restaurant operating in department "B" on the balcony floor of the exposition hall, where excellent food may be obtained at reasonable prices and where, if necessary, as many as four hundred diners can be seated. This restaurant will also be of value to the exhibitors.

Few of the delegates will leave Mechanics' building from the time the gavel drops at the opening of the convention until late afternoon or evening. On Tuesday at 2:45 p.m. the official photograph of delegates and their wives, exhibitors and guests will be taken on Huntington avenue in front of the Mechanics' building. At 3:30 p. m. the special educational committee, of which C. W. Wanger is chairman, will start a program of particular interest and value to master plumbers, which program will last for an hour and a half or two hours and will be presented in the convention hall at Mechanics' building.

There will be a dinner to the state presidents at 7 o'clock Tuesday evening, at the Hotel Statler, and it is probable that the delegates and their wives will again be separated for a time, in connection with the evening's entertainment program. There will be a theater party, card party or musicale for the ladies, lasting from 8 to 10:30 and a stag party with boxing bouts for the men at the convention hall in Mechanics' building. At the conclusion of the parties the men will join the ladies in the



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PRESSURE GOVERNOR
for Hot Water Heating Systems

More and more plumbing and heating contractors and engineers are recommending and installing the KAINER Pressure Governor in place of expansion tanks and fittings on their hot water layouts.

The overwhelming nationwide acceptance of the KAINER during the past few years affords ample proof of the sound engineering principles that characterize the design and construction of this dependable Governor.

The KAINER Governor reduces the cost of a hot water lay out, simplifies installations, makes a better job, saves your time and your customer's money, increases your profits and builds good will.

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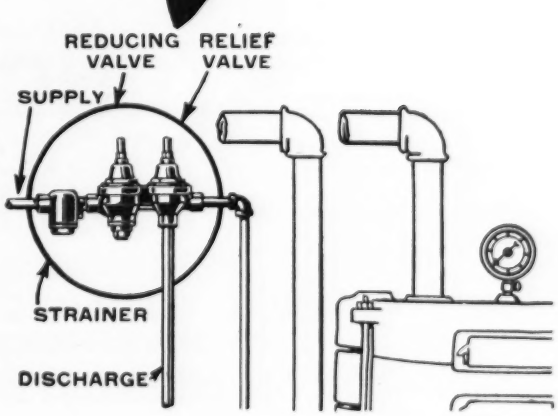
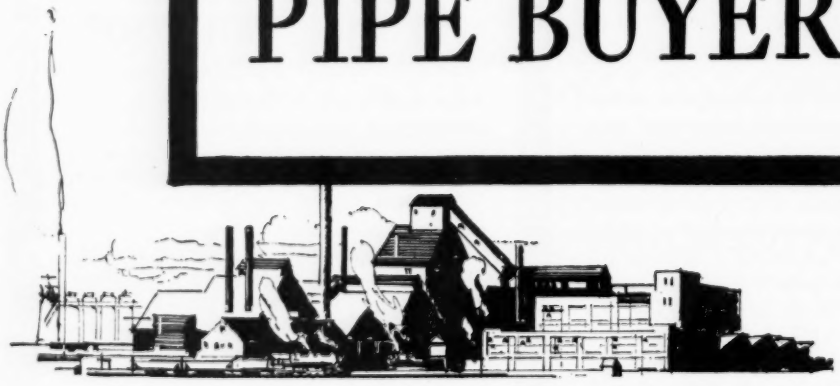


An Announcement of interest to all PIPE BUYERS



Toncan Copper Molybdenum Iron, well and favorably known in practically every industry for its resistance to rust and corrosion, is now available for the first time as pipe in a full range of sizes from ¼ to 16 inch—standard, extra heavy and double extra heavy.

The metallurgy of Toncan Iron is simplicity itself. It is a true alloy, not just a mixture. It is highly refined iron with a predetermined amount of two other elements, copper and molybdenum, held in solid solution.

In sheets, culverts, rivets, staybolts, tubes and other forms it has established an enviable reputation for long life. Exhaustive tests over a long period of time in the laboratory and in the field have proved Toncan Iron the ideal ferrous material for pipe.

REG.U.S.PAT.OFF.
TONCAN
COPPER
MO·LYB·DEN·UM
IRON PIPE

As protection to you, we mark it blue.

Sold Exclusively by

REPUBLIC IRON & STEEL COMPANY
YOUNGSTOWN, OHIO

Birmingham Boston Buffalo Chicago Cincinnati Cleveland Dallas Denver Detroit
El Paso Los Angeles New York Philadelphia Pittsburgh San Francisco Seattle St. Louis

Hotel Statler ballroom, where dancing will be enjoyed until one o'clock Wednesday morning.

The convention session will open promptly at 10 o'clock Wednesday morning and the day will conclude with the final program of the special educational committee, starting at 3:30 p.m. and lasting about two hours. There will probably be sight-seeing trips for the ladies following a luncheon at the hotel. In the evening, the delegates and guests with the ladies will be entertained by a trip to Revere or some other beach, if the weather is favorable, where an evening of light amusement will be enjoyed.

The final convention day will see the proceedings start at 10 o'clock sharp in the morning and carry on until the final business is transacted, the officers for the coming year elected, the convention city for 1931 chosen, and the meeting adjourned sine die. There will be no program by the special educational committee given on Monday or Thursday. The president's ball will be held Thursday evening from 9 p.m. on at the Hotel Statler ballroom. The "Million Dollar Plumbing Exposition" will close at 6 p.m. on Thursday.

On Friday with the serious business out of the way, the most elaborate of the entertainment features will be presented, consisting of a trip for the delegates, exhibitors and guests to Bunker Hill, Lexington, Concord, Henry Ford's Wayside Inn and other historic spots in the vicinity of Boston. Although this trip is being arranged by the entertainment committee of the Boston association, it is probable that it will be presented to the visitors as a token of appreciation by some of the leading manufacturers of plumbing products in the country. It is also probable that other entertainment features and special courtesies will be presented to the visitors by the members of the Massachusetts Sanitary club, of which Assistant Chairman Gillespie is president, the local jobbers and other organizations anxious to show hospitality to the master plumbers attending the Boston convention.

That there will be an unprecedented attendance at the Boston meeting is confidently anticipated by the committee in charge. The opportunity to visit the home of their ancestors, to give their children a chance to see the historic spots in and about the "cradle of liberty," and participate in the attractions and events incident to the tercentennial celebration of the Massachusetts Bay Colony, will unquestionably attract to the Boston meeting, in the ideal month of June, master plumbers with their wives and families from every section of the United States.

There will be special efforts made by the convention and exposition committee to bring to the exposition hall not only master plumbers but also the leading New England architects, builders and others interested in construction work, as well as the prospective home builder and the present home owners of Boston and surrounding cities.

Thousands of dollars will be spent by the convention and exposition committee in publicity, over the radio and through other advertising mediums, to acquaint New England with the importance of this plumbing-art exposition and to make the average citizen of Boston and vicinity plumbing-conscious. The special educational

(Continued on Page 152)

ASK JOE!

—What he thinks of a WARNOCK SMOOTH PIPE VISE. Watch his smile when he shows you a clean, unscratched installation.

Your jobber will supply you

WARNOCK MANUFACTURING CO.
WORCESTER MASS.

Vitreous China

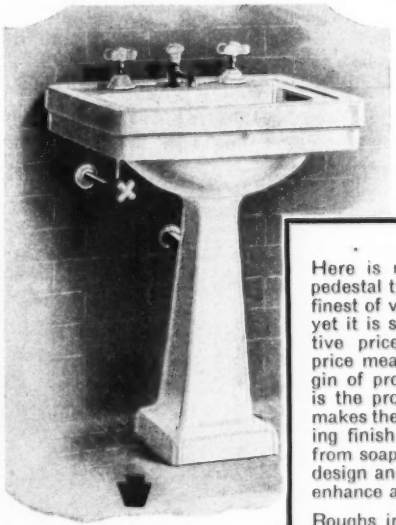


Plate 138-F

The Pike Pedestal Lavatory

Here is real value! This pedestal type bowl is of the finest of vitreous china and yet it is sold at a competitive price. Although this price means a bigger margin of profit for you yet it is the product itself which makes the sale. Its gleaming finish will not discolor from soaps or acids and its design and appearance will enhance any bathroom.

Roughs in to a very small space and yet the inside is standard for bowls. Has concealed FRONT overflow.

Write for full details.

KEYSTONE POTTERY CO., Trenton, N.J.

Chicago Contractors Hold Annual Dinner Meeting

The Plumbing Contractors' Chicago Association held its annual meeting and dinner on Saturday evening, January 4, with an attendance of approximately 200 members. The gathering, which was the largest attended by local master plumbers for several years, was held at the banquet hall of the Elks' building, in Chicago.

The meeting was presided over by President John J. Calnan, who stated, in his annual report, that during its forty-six years of existence, the Chicago association has wielded considerable influence in advancing sanitary science, in encouraging improvement of plumbing appliances, and helping to bring installations to their present high standard, through the adoption of plumbing laws and ordinances.

President Calnan quoted at considerable length, excerpts from an address by Col. William J. Donovan of the federal trade commission made before the 35th annual meeting of the Central Supply Association last October, pertaining to the functions of trade associations. He brought out that in trade organizations the courts have recognized that they have a proper function to perform, but pointed out that the measure of conduct exacted of an association by the law is more severe and more exacting than that required of an individual.

Following his report, President Calnan was given a rising vote of thanks for his excellent work as president of the association during the past year, and on behalf of the association was presented with a diamond ring by J. C. Naughton, a friend of many years, who paid a tribute to the ability of the retiring president as a representative, successful business man.

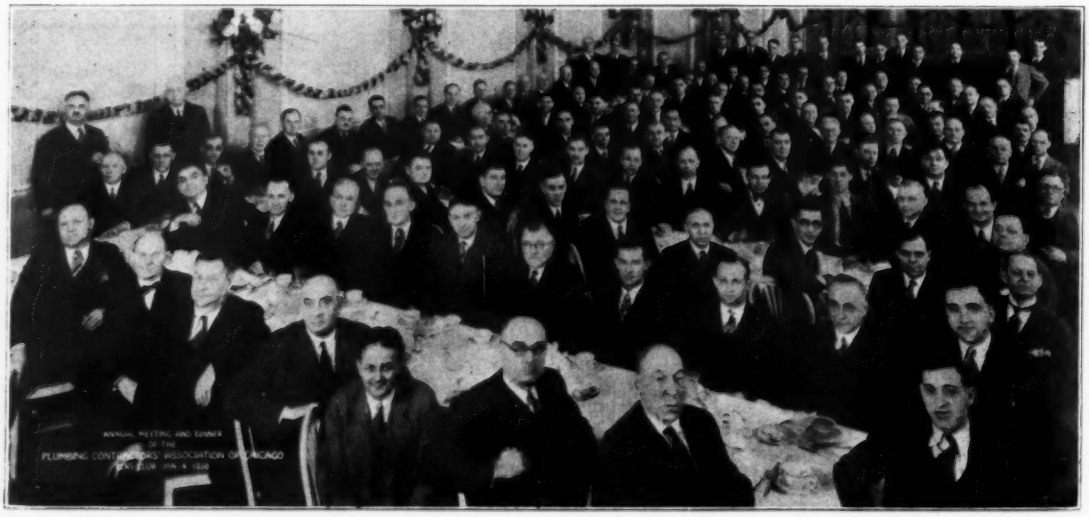
The chairmen of the various standing committees, following their reports, were also extended a vote of thanks, as was the secretary, Peter M. Munn, for his work during the past year.

National Director R. E. Murphy, who is treasurer of the local association, pointed out how much greater benefit the members could receive if the attendance at the regular meetings was as great as that at the annual meeting.

The following officers were elected for the coming year: President, R. J. Weber; vice president, J. W. Fettes; treasurer, R. E. Murphy; and secretary, Peter M. Munn. John J. Calnan, R. A. Ferguson, Henry Swade, H. J. Becher, George J. Feldkamp, C. J. Stanley, Michael Mele and John S. MacKenzie, were elected to the board of directors. All of the new officers were introduced individually by past president Joseph W. Cannon.

In accepting the gavel from his predecessor, Mr. Weber thanked the association for this mark of confidence and promised to work for the advancement of the organization during the coming year. He pointed out that the association, after all, is only the members themselves and that the officers can only guide and benefit the members in proportion to the amount of support obtained from the individual members. He cited, as the principal benefit that can be obtained from an association, the protection against indiscriminate and unjust laws; protection against oppression and unjust dealings on the part of customers and agencies to whom the contractor looks for business.

Among the prominent guests in attendance at the dinner and meeting were Lewis R. Friend, president of the Wisconsin Master Plumbers' Association; Walter Dusold, president of the Milwaukee Master Plumbers Association; past national directors F. C. Kuetemeyer and Jacob Schuh; and C. A. Bolton, secretary of the Illinois Master Plumbers' Association, all of whom made brief remarks. Following the business session, the members listened to an excellent vaudeville program provided by the entertainment committee which terminated the evening program. The committee in charge of the arrangements for the dinner and entertainment were E. C. Wagner, chairman, Charles E. Gawne, Walter Comptor and Walter J. Blyth.



Group picture taken at the annual dinner meeting of the Plumbing Contractors Association of Chicago

Retail Sales Plan Used by One Wholesaler

(Continued from Page 103)

will we add less than 20 per cent; therefore, in any case that our customers find a written quotation, signed by our recognized representatives, our plumbing customer can feel assured that there is a 20 per cent commission reserved for him. This will be true of any quotation we make regardless of how low this quotation may appear to be to our plumbers, providing it is made in writing and properly signed.

"If we quote a low price, we do not cut the plumber's commission, but rather cut our own profit; therefore, if the plumber desires to make a sale direct, he may do so knowing that he can purchase the material from us for that particular job on which we have made our written quotation, at a price showing a 20 per cent profit to himself.

"As mentioned in the foregoing, we still will be glad to handle sales as in the past, if our customers wish to bring their clients into our showroom, and we will gladly have our representative attend and assist him in any way to make the sale, adding the percentage of profit which our customer requests, to any price we may quote, providing, however, that our customer does not ask an exorbitant profit which we believe is unfair to the consumer—in other words, we will not quote to the consumer a higher price than our top resale price, which in every instance, will carry at least 33 1/3 per cent mark up.

"The next point is how do we distribute this commission?—

"1.—Providing we make the above sales direct to the consumer, without knowledge of who is to install the material, we, upon notification from our plumbing customer that he has installed the fixtures, will pay the commission to him; however, this commission will only be paid after the job is completed and then will be paid immediately.

"2.—In the case where the plumber sends his customer in, or brings him personally, we, of course, know to whom the commission is to be distributed and therefore, upon receiving payment for the material, pay the commission to that master plumber at once.

"3.—Most important.—Of course, there will, no doubt, be some cases where the legitimate master plumber does not install the material. In this case, we have a 20 per cent commission reserved, but no plumber to give it to, as some handy man or some journeyman plumber, out of a job, or such, has installed the material; therefore, as we are strictly wholesalers, we cannot take the plumber's profit as our own, and we, therefore, set up a reserve of undistributed plumber's commissions and at the end of six months, we have a fund called "Undistributed Plumber's Commissions" with no particular plumber to give it to; therefore, we plan to declare a dividend to the listed plumbers who have worked with us on this plan and co-operated with us on our regular wholesale business. All plumbers who have purchased at least $500 worth of material in the course

The Lives of Your Clients Are In Your Hands

PREVENTION RATHER THAN CURE

Modern Garage Drainage Installation is equally as essential as the Prescriptions of Medical Directors.

Architects, Sanitary Engineers, and Contractors will safeguard the health and property of their Clients by specifying Dehn's *PeerlesS* Garage Drainage System.

Catalog with full information upon request. Your jobber can supply you.

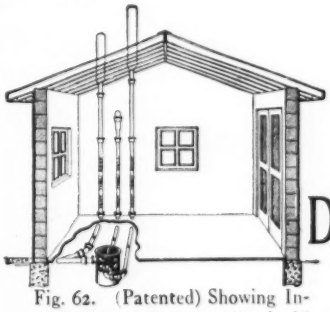


Fig. 62. (Patented) Showing Installation of Dehn's "PeerlesS" Garage Drainage System.

Compound Injector & Specialty Co.
ESTABLISHED 1897
GEORGE J. DEHN, S. E., PRESIDENT
Originators, Designers and Sole Manufacturers of
DEHNSANIGARD
THE QUALITY GOODS
Trade Mark Registered

419-421 D. North Laramie Avenue Chicago, Ill., U. S. A.

TRENTON BRASS PRODUCTS

T B T B

BOILER COUPLINGS

Trenton Brass Boiler Couplings are carefully made. They are time savers and you will find they never fall down on the job.

Write for our catalog today.

TRENTON BRASS & MACHINE CO.
Trenton, New Jersey
Represented by ROLLIN C. WILSON
7 E. 42nd St., New York, N. Y. 261 Franklin St., Boston, Mass.
13 North Ave., East, Cranford, N. J.

The A. B. C.

—*An aid to Advertisers*

THE Audit Bureau of Circulations is an association of advertisers, advertising agencies and publishers, who are co-operating to standardize and verify publication circulation data, and thus place the buying of space on a basis of "Known Value."

The Bureau numbers among its members the majority of the leaders in the publishing and advertising fields of the United States and Canada.

The Publisher makes a report to the Bureau showing total circulation and details of distribution by states. These statements are audited in the publisher's office and against the publisher's records by one of the Bureau's experts.

By means of the A. B. C. audit reports, you, Mr. Advertiser, can analyze the circulation of a paper and determine its value to you as an advertising medium.

By patronizing A. B. C. papers, you guard your own interests and participate in this nation-wide movement to place advertising on a sound, business-like basis.

DOMESTIC ENGINEERING is, of course, a member of the A. B. C.

of the year, are entitled to a dividend. It will be distributed on this basis.

"Assume that we have $10,000 worth of undistributed plumber's commissions, and assume that our total business to our plumbing customers is $500,000; therefore, the undistributed plumber's commission is 2 per cent of our total business; therefore, our customers purchasing $500 worth of material in any form are entitled to a 2 per cent dividend.

"Example: Assume plumber buys $5,000 worth of material in the course of the year, 2 per cent of which is $100.00. At the end of the year, we give him this dividend on the $5,000, which equals $100.00.

"In the case of the party who buys $2,000, the dividend would be $40.00.

"In the case of the plumber who buys $500.00, his dividend would be $10.00.

"This dividend, of course, will be divided, based on sales in the various territories, as we, of course, wish to distribute where the profits were made—in other words, our home territory will necessaily return us the greatest sales. These sales will necessarily be credited to the home territory.

"In some of our far territory, of course, we may not make any sales at all, and those cities where we have not made any sales, will not receive a dividend. The only benefits that the customers in those towns will receive from this sales plan will be the newspaper advertising which we will do for them and the benefits that they will receive from an enlarged and more beautiful show room, to which they may bring their customers.

"We believe this plan will go a long way towards creating a lot of new business and will certainly be a benefit both to ourselves and our plumbing customers, and to help develop sales for our customers, we have formulated this plan."

* * *

Bear in mind that this company is one of the oldest wholesale concerns in this territory, and we feel assured that the plumbers realize that all our plans in the past have been for the betterment of business conditions for our recognized dealers and that always strict co-operation has been received from us by them, and we wish to further assure them that this new plan is just another method to assist them and ourselves to combat a condition which is rapidly growing and that we believe calls for the best thought of all concerns in the industry.

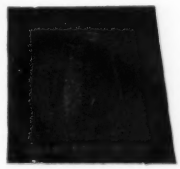
We are going to a very large initial expense to put across this proposed sales plan, and if it is not successful, it will show us a considerable loss. If, however, it is not successful, we feel that we much prefer losing money attempting to develop a good plan for our high grade customers rather than lose it on bad debts through the fly-by-night and unreliable plumber who figures his job too cheaply and does not allow a living profit to his competitors.

◆

The Nobrak Fibre Products Co., a Massachusetts corporation at 79 Sudbury street, Boston, has been dissolved and re-incorporated under the name of Nobrak Fibre Products Corp., with offices at 131 State street, in that city.

We don't know what's in chop suey—but we've always had a lot of suspicions.

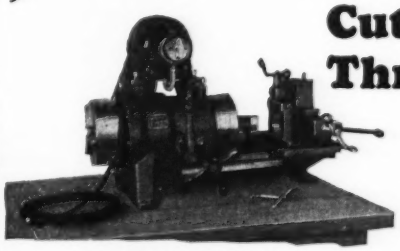
BUT we do know what's in a Midland Roof Flashing and that's nothing but pure virgin lead.



Your jobber has them in stock

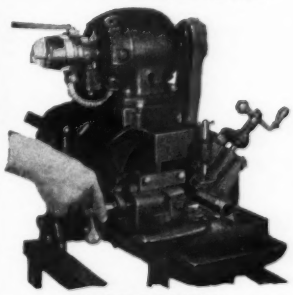
Midland Metal Mfg. Co.
Kansas City, Mo. *Newark, N. J.
**Newark plant manufactures roof flashings only*

Cuts Pipe Threading Costs



THREADS RAPIDLY

A full-fledged Portable Pipe Machine for Reaming, Chamfering, Threading and Cutting Off pipe from ⅛″ to 2″.



CUTS OFF RAPIDLY

Uses any standard make of solid square right or left hand pipe or bolt dies.

Weighs 250 pounds. Operates off either A. C. or D. C. lighting circuits. Is sufficiently powered to drive geared heads on the larger pipe, up to 6″.

A real pipe machine at a price you can afford. Ask us about it today. Give us the name of your supply dealer.

PEERLESS MACHINE CO. · Racine, Wisconsin

"CHICAGO"
Pipe Threading Machines Production Precision
Latest and Most Advanced Types on the Market
Chicago Pipethread Machine Co., Racine, Wisconsin
Offices and Factory: 1421 Racine Street

SLOAN ROYAL · MARINE · GEM FLUSH VALVES

Taylor & Fisher, *Architects* J. Henry Miller, Inc., Gen'l. Cont'rs.
C. L. Reeder, Const'n. Eng. Howard C. Crook Co., *Plumbers*
James Robertson Mfg. Co., *Fixtures*

BALTIMORE TRUST CO. BLDG.
Baltimore, Md.
Equipped throughout with

ROYAL FLUSH VALVES

Albert H. Larsen, *Architect* Lacey & Schulz, *Plbg. Contrs.*
Walworth-Calif. Co., *Fixtures*

APARTMENTS
Octavia & Eddy Sts., San Francisco, Calif.
Equipped throughout with

MARINE FLUSH VALVES

J. L. Koster, *Architect* Wm. Gawne Co., *Plumbers*
Inland Supply Co., *Fixtures*

APARTMENTS & STORES
Lockwood Ave. & Lake St., Chicago
Equipped throughout with

GEM FLUSH VALVES

SLOAN VALVE CO.—CHICAGO

Branches in All Principal Cities

MARKETS

BUSINESS REPORTS FROM LARGE JOBBING CENTERS

Ordering Shows Some Gain

PLUMBING and heating materials moved at about an average seasonal pace during the last two weeks and in some sections of the country slight gains in the demand for supplies were apparent in comparison with the preceding two-week period. Since our last review was published several changes have been announced by manufacturers in their prices to wholesalers. About the middle of the month a number of full-line manufacturers of brass fittings reduced their prices in a rather substantial way on certain sizes of brass fittings and also made lesser reductions on some other sizes. A change was also made in makers' prices on soil pipe, their prices to jobbers being advanced. A price advance was also announced by several porcelain manufacturers. As a general rule wholesalers are confining their purchases to fill-in quantities, although some of the above mentioned price changes served to stimulate business in these commodities. Factories for the most part are granting quick shipments.

December shipments of domestic water softeners, as reported to the Department of Commerce by 21 manufacturers, were 831 units, with a net sale price of $113,425, as compared with 1,068 units in November, with a net sale price of $147,048, and 928 units in December, 1928, with a net sale price of $106,720. The total output for 1929 was 15,963 units having a net sale price of $1,848,396, as compared with 16,189 units valued at $1,903,587 in 1928.

CENTRAL WEST

Business Holds Seasonal Level—

Business in the plumbing and heating line in the Central West territory failed to develop any changes of importance during the fortnight just passed, at least as far as consumption of materials by contractors was concerned. Since our last report was published, though, a number of changes have been announced by manufacturers in their prices to wholesalers. Several soil pipe makers sent out a notice to their distributors to the effect that prices were advanced. Some of the full line manufacturers of brass fittings made a substantial reduction in their prices on certain sizes and a lesser decrease on some of the other sizes. Another price change of importance to take place since our last review was the advance announced by several porcelain manufacturers. The interstate commerce commission has announced that the freight rate on soil pipe will advance on March 19. Jobbers in this territory are purchasing a little more freely than was the case two weeks earlier, but still buyers for wholesale houses are conservative in their placements of orders.

December construction contracts awarded in the Central West showed a substantial increase over November but a decrease from the preceding December. Last month's total, $97,352,700, in amount, was 13 per cent greater than the November 1929 record, but was off 19 per cent when compared with the corresponding month of 1928. The December contract total brought the amount of new construction work started in the Central West during the 1929 year up to $1,681,835,800, compared with $1,934,774,900 for the year 1928, a decrease of 15 per cent.

Soil Pipe

Since our last report a number of soil pipe manufacturers have announced an advance in prices to their wholesalers. It is also reported that the Interstate Commerce Commission has announced a change in freight rates on soil pipe, to become effective on March 19. The new rates are to be higher. Manufacturers reported a fairly good interest among wholesalers for their future requirements of soil pipe, and consequently business showed considerable of a pick-up in comparison with the earlier days of the year and the closing days of 1929. Makers as a general rule are granting quick shipments.

Pipe—Steel and Wrought Iron

Contractor requirements along the lines of steel and wrought iron pipe failed to show much of a change in the past fortnight in comparison with the preceding like period. Master plumbers and heating contractors are only fairly active in this territory at the present time, and as a result, wholesalers' turnovers are light. Both wrought iron pipe and steel pipe mills have well-assorted stocks on hand and shipments from sources of production are well maintained. Mill prices have not been changed on either type of pipe.

Fittings

Since our last review was published a number of full-line manufacturers of brass fittings have announced changes in their prices to wholesalers. The new price sheets carry rather substantial reductions on certain sizes of brass fittings and on other sizes the reductions are not of such large proportions. It is reported that wholesalers have come into the market for fairly sizeable quantities in taking advantage of the lower prices. Prices on the other types of fittings were not changed. Makers are granting quick shipments.

Enameled Ware

Enameled ware was not required in large quantities by master plumbers during the last two weeks and wholesalers' turnovers of ware were consequently of a rather light nature. In the majority of cases jobbers have only average stocks of enameled ware

and they are not placing a great many large orders with manufacturers' salesmen, according to most reports. Factories are able to take care of requests for staple items promptly. No change has been announced in manufacturers' prices to their distributors.

Pottery

Pottery prices have not been changed by manufacturers since our last review appeared. However, it is reported that a number of porcelain manufacturers have in the meantime sent out a notice of an increase in their prices to wholesalers. Demand from contractors for pottery was only moderate in the period covered by this report. Wholesalers evidenced little willingness to anticipate their future requirements and new business reaching makers is mainly for fill-in purposes. Deliveries of staple items are being made in good time.

Plumbers' Brass Goods

Salesmen for cast and tubular brass goods manufacturers report a fairly good amount of fresh business since the year opened. Wholesalers as a general rule entered the year with rather low stocks of brass goods, and in some cases have found it necessary to replenish their supplies. Factories are making quick shipments. Manufacturers have not announced any changes in their prices to wholesalers.

Range Boilers

Range boiler business in this territory was moderate during the past fortnight. Wholesalers are buying only as the needs of their customers indicate and contractor demand is rather light. Sources of production have good stocks and jobbers report no difficulty in getting material as wanted. Prices are firm and unchanged.

Boilers and Radiators

New orders for 1,021 steel boilers were placed in December, as reported to the Department of Commerce by 81 manufacturers comprising most of the leading firms in the industry, as compared with 1,239 boilers in November and 1,343 in December, 1928. Total orders for 1929 amounted to 18,518 boilers as compared with 19,672 boilers in 1928. Cast iron boilers and radiators moved in only a fair way during the last two weeks. Contractors are not very busy on new work. Factories are shipping promptly.

NEW YORK

Increase Shows In Volume—

The completion of inventories with consequent demand on plants for replenishment marked the activity in this territory during the past fortnight. Wholesalers' stocks in most instances were reported as being considerably lower than those of last year, and with turnover in several lines approximating or in some cases even exceeding that of 1929, it is to be expected that specifications on plants will continue on a relatively favorable basis.

Price changes during the period have been mixed, and there is an attitude of caution among both buyers and sellers according to the consensus of reports; this is said to be conducive to a "spot" market in many commodities.

Final construction figures for the year just ended are now making their appearance, and the following report is indicative of the trend to date.

The volume of contracts let for new building and engineering work during the past year in the Metropolitan district of New York amounted to $1,233,173,100, according to F. W. Dodge Corp. The above figures were 21 per cent under the unusually high total for 1928, but there was only a drop of 11 per cent when compared with the 1927 contract total.

Analysis of the year's construction total showed that the commercial, industrial and educational classes of work were well ahead of both their 1928 and 1927 totals. Public works and utilities were below 1928 and a little ahead of 1927, but residential building was considerably less than 1928 and 1927 records.

The table below gives the direct comparison:

In Thousands of Dollars

	1929	1928	1927
Commercial Buildings	$ 262,600	$ 232,895	$ 247,704
Industrial Buildings	54,232	35,017	33,295
Educational Buildings	73,816	71,784	52,361
Residential Buildings	547,333	863,276	760,537
Public Works & Utilities	205,639	250,395	190,515
All Other Classes	89,553	102,309	108,207
	$1,233,173	$1,555,676	$1,392,619

New construction work started in the Metropolitan district during December 1929 reached a total of $105,728,500 as compared with $149,884,000 for November 1929 and $123,015,800 for December 1928.

While contracts kept falling off, contemplated new work reported continued at a high level and the year's total closed amounting to $2,400,389,800 against $2,409,582,900 for the year 1928.

During the last few months of 1929 there were several large projects proposed for which work is likely to start on some time this year. Here are some of the big jobs reported: The Rockefeller development project, containing hotels, apartments, stores, offices, etc., and amounting to $98,000,000. The Tri-Boro Bridge linking Queens, Manhattan and the Bronx and costing in the neighborhood of $25,000,000 (a small contract has already been awarded on this item and more contracts will be let all through this year). Another important linking project reported is the $60,000,000 Liberty Bridge to be erected across the narrows connecting Kings and Richmond. In addition to the above mentioned jobs there are several large subway and other public work contracts that are likely to be awarded during this year.

Soil Pipe

The advance in price announced by one maker was followed by several others within a short time; some buying by wholesalers was stimulated by the rise, but requirements were not entered in any speculative mood, but rather for actual contractural specifications in sight, according to most wholesalers. An advance in the freight rate on soil pipe, to be effective on March 19 has been announced by the Interstate Commerce Commission. Inventories are low at all points of distribution, with no apparent tendency to increase them according to most reports.

Pipe—Brass, Steel and Wrought Iron

The volume of pipe moving continues to compare favorably with that of a year ago according to most wholesalers interviewed, and no changes in price have been made by manufacturers or distributors. Industrial requirements during the inventory period shut-down were heavier than usual, reflecting the wear and tear on equipment occasioned by a record-breaking output in nearly all divisions of manufacture.

Fittings

A downward revision in the price of some sizes of brass fittings was announced by several manufacturers during the past two weeks. The volume of specifications received was of such size as to lend considerable activity to the market. Activity in other divisions of fittings was reported

to be of normal proportions, with the trend on the upswing; no changes in prices were reported.

Enameled Ware

The revision of prices recently noted has had a stabilizing effect according to most wholesalers, and business is proceeding on a somewhat more active basis than at this time last year, although it will be recalled that the volume a year ago at this time was characterized as fair to poor. However, a change for the better in the trend, however small, is regarded as a basis for optimism in manufacturing and distributing circles. Wholesalers are gaining somewhat larger stocks, but are not anticipating requirements to any marked degree.

Pottery

There have been no noteworthy changes in volume or quotations in this commodity during the past two weeks. Prices are characterized as firm. Producers of porcelain products effected a revision in prices during the week of the 13th. This change in the instance of some items was rather sharply upward while on others it was moderate, the bulk of the demand centering on large operations now in the bidding stage. Inventories are of moderate size.

Plumbers' Brass Goods

Purchases of brass goods by wholesalers have been limited in most instances to immediate needs, according to leading manufacturers. Prices have shown a marked firmness. Tubular goods have felt some increase in demand during the past fortnight according to several wholesalers interviewed. Stocks on hand are of fair working proportions among manufacturers and wholesalers, according to reports.

Range Boilers

Activity in this division is reported to be of moderate proportions, with the trend toward larger volume. Prices have shown marked firmness, and no changes are reported from sheets issued last spring. It is reported that one manufacturer has withdrawn quotations on storage tanks, however, during the past two weeks. Inventories are low at most points of distribution, although shipments of staples are reported as being prompt.

Boilers and Radiators

While the seasonal peak in demand among contractors for this commodity has been passed for a considerable time, requirements are reported by wholesalers as having held up well since the first of the year; this reflects in part the continuance of replacement and improvement demand as a larger factor in the turnover. Prices are unchanged, and no delays are experienced in obtaining staple items from plants or wholesalers.

Soil Pipe

Soil pipe makers advanced their prices to wholesalers on January 14th. Activity in this commodity has been somewhat retarded since the first part of December, but it is expected by makers that the advance in prices will stimulate buying in the cases of such jobbers as require pipe for stock rehabilitation purposes. Producers have ample stocks on hand to fulfill all commitments in a speedy manner.

Pipe—Brass, Steel and Wrought Iron

Last of the month business in all three types of pipe was of a meagre nature, but some quickening in interest in all types was noticeable during the past fortnight. Orders for brass pipe were received by makers' representatives in small quantities for immediate shipment with the start of the 2nd wek in this month. Steel pipe is moving in increased tonnages in comparison to last month's volumes. One wrought iron pipe representative in this section reports a decided quickening in demand, largely calling for stock replacements. However, contractor demand is still moderate. Prices have not deviated and mills are able to deliver with usual promptness.

Fittings

A decided improvement in interest was instituted in the brass fittings market during the fortnight with the announcement by some full line producers of a substantial decrease in the price of some sizes of fittings and a lesser decrease in some of the other sizes. Distributors have come into the market to quite an extent in purchasing these fittings. Master plumbers and heating contractors are making only moderate commitments at this time, however, as they are not actively engaged in many installation projects. Shipments are carried out in an expeditious manner.

Enameled Ware

Enameled ware salesmen in this section report that the trend of enameled fixture business is upward for the month. The 1st week was characterized as extremely slow in requirements for this commodity, but as stock taking was completed orders were received in fairly good quantities for the purpose chiefly of re-establishing stocks. Activity is also noticeable in makers' warehouses as old orders are being shipped to their customers. No change in prices has been noted, and delivery from sources of supply is maintained satisfactorily.

Pottery

Little activity in the pottery market was experienced during the fortnight with the exception of a few large projects started sometime past and requiring finishing materials at this time.

MIDDLE ATLANTIC

Activities Are Increasing Slowly—

Distributors in this section as a group are of the opinion that the plumbing and heating business shows improvement as compared to last month. The first week of the new year was necessarily slow as many jobbers had not completed the taking of their inventories, and were little interested in stock purchasing. Fresh business was evident during the past fortnight, however, even though contractors are only moderately engaged in installation work at this time. Carload orders for materials are conspicuously absent in most lines, and the majority of orders received call for immediate delivery, indicating that they represent stock covering largely and not new business. Some jobbers expressed the opinion that business would gradually improve.

Price changes were noted in two items which reflected a quickening of volumes in those materials. Producers as a whole are well stocked, and ready to meet any demands made on them by the trade.

Contracts awarded for the first week of the year 1930 in the Middle Atlantic section show a decided increase according to the report of the F. W. Dodge Corp., the total valuation being $39,848,100 of which $29,178,800 went to projects of the public works and public utilities type. These figures are in comparison to a total valuation of $7,509,100 for the 52nd week of 1929.

F. W. Dodge also reports that the valuation of new building and engineering work in the Middle Atlantic district in December, 1929, amounted to $21,389,900, as compared with $41,363,000 for November and $51,962,100 for December, 1928.

The December contract total brought the amount of construction started in this section during the year up to $671,500,300, which represents a drop of 15 per cent from the 1928 total.

Contemplated work reported last month amounted to $109,917,600. An increase of 35 per cent was recorded over the preceding month's total, but a loss of 19 per cent was noted from the December 1928 record when compared.

Potters' inventories are not extreme in any case, but all have produced sufficient fixtures to meet all present and near future demands which may be made by the trade. A few distributors who have been restricting their purchases due to inventory have placed orders for staples with manufacturers during the bi-weekly period. Prompt service is given by potters on all shipments. Since our last report several makers of porcelain goods have revised their prices upward.

Plumbers' Brass Goods

Some jobbers have contracted for early year purchases of brass goods. Orders in December were unusually scarce for advance shipments. Wholesalers are fairly well stocked but a few after taking yearly stock replenished their shelves in a satisfactory manner during the past week. The reduced demand emanating from the contractors has naturally retarded current business. Shipments are promptly made and no notice of any price change has been reported.

Range Boilers

In this section during the month of December the range boiler business was quiet. Little has transpired to change this condition at the time of this review, although some activity has taken place to bring the volume above December. Prices remain firm, and boilers are delivered without delay.

Boilers and Radiators

Heating contractors are still engaged in installations of a repair nature, but the seasonal slump which is naturally to be expected at this time has overtaken the boiler and radiator market. The briskness which characterized operations by radiator manufacturers during the early fall and early winter was not in evidence throughout the past few weeks. Makers have not altered their prices, and are amply supplied to make desirable deliveries.

NEW ENGLAND

Early Year Construction Is Light—

Since the first of the year there have been noted but few major developments of outstanding character, and residential building has also been involved in the statistical reports of considerably decreased activities in construction in the New England area. Employment in the building trades cannot be described as normal for this time of year, yet the consensus of opinion indicates an early renewal of construction. Authorities aver that 1930 will surpass the year gone by, for there is apparent, but still to be appropriated for, a considerable volume of municipal and state work which is assured of inception within the following months.

It is generally conceded that the closing months of last year did not in any way aid to overcome deficiencies in volumes which had been experienced during previous months. Wholesalers in general have completed their inventories, but at this writing their auditings of books have not revealed the status of profits accrued during 1929. While consumption demand is not especially active, distributors have been placing fairly good-sized orders to effect even balances of their stocks. Such placements by wholesalers, however, are not sufficiently voluminous as to afford manufacturers' representatives receipts commensurate with their anticipations. Jobbers had refrained from placing orders both for stock purposes and for specific operations until inventory and auditing processes had

The Stock Market

Range for Week Ending January 25, 1930†

Par Value	1929 High	1929 Low		*	Weekly High	Weekly Low	Weekly Close
NP	223⅜	77	Air Reduction Sales Co.	A	130⅞	121⅛	123⅞
NP	55⅜	18	American Rad. & Stand. San. Corp.	A	33½	31	32⅜
25	144⅝	60	American Rolling Mills Co.	A	88¾	84⅝	86
50	140	67¼	Anaconda Copper Mining Co.	A	75	69⅝	72¼
NP	62	32	Bastian-Blessing Co.	C	40	38	39
NP	140¾	78¼	Bethlehem Steel Co., Com.	A	97⅝	94½	95
100	128	116⅜	Bethlehem Steel Co., pfd.	A	127	122¼	126
NP	55¼	16¼	Brunswick-Balke-Collender Co.	A	18½	13	14¼
NP	192⅝	50	A. M. Byers Co., com.	A & E	94⅝	88	89
100	121¼	105	A. M. Byers Co., pfd.	A & E	109	109	109
100	127½	118	Century Electric Co., com.	F	118	118	118
50	4¾	1	Chicago Nipple Mfg. Co., "A"	B	2¼	1	1
50	1½	1	Chicago Nipple Mfg. Co., "B"	B	1	1	1
25	48	42	Crane Co., com.	C	43	43	43
100	119	112	Crane Co., pfd.	C	113¼	113¼	113¼
20	21	11½	Eagle-Picher Lead Co.	H	12⅞	12⅞	12⅞
NP	35	11	Fairbanks Co., pfd.	A	36¼	20½	36¼
NP	54⅞	29¾	Fairbanks, Morse & Co., com.	A	36	36	36
100	110⅞	101½	Fairbanks, Morse & Co., pfd.	A	105	105	105
NP	25½	12	Greenfield Tap & Die Corp.	B	13	13	13
NP	38	22¾	Iron Fireman Mfg. Co.	C	25	23¼	24½
NP	242¾	90	Johns-Manville Corp., com.	A	132¾	124½	126
100	123	118	Johns-Manville Corp., pfd.	A	121½	121½	121½
100	126	117	Jones & Laughlin, pfd.	A & E	120	119⅜	120
NP	123¼	59	Minneapolis-Honeywell Reg. Co., com.	A	62	62	62
NP	75	48	Modine Mfg. Co.	B & C	54½	51	53½
NP	55⅛	21	Motor Wheel Corp.	A	28⅛	26⅞	26⅞
NP	67½	30	F. E. Myers & Bro. Co., com.	A	40⅝	39	39
100	105	101½	F. E. Myers & Bro. Co., pfd.	G	102	102	102
100	210	129¾	National Lead Co., com.	A	146⅞	145⅝	146⅞
100	141½	138	National Lead Co., pfd. "A"	A	139¾	139	139
100	122	116	National Lead Co., pfd. "B"	A	116⅛	116	116
NP	17	1½	National Radiator Corp., com.	A	4½	3¼	3½
NP	41	1½	National Radiator Corp., pfd.	A	11	6¾	6¾
5	31	23	Herman Nelson Corp.	B	27½	27½	27½
NP	96	69	Ohio Brass Co., "B"	B & G	74	71½	74
NP	31½	25	Revere Copper & Brass., Inc., com.	A	29	29	29
NP	78	70	Revere Copper & Brass., Inc., pfd. "A"	A	71	70	70
NP	19⅜	2⅛	Richmond Radiator Co., com.	B	3	3	3
NP	38⅞	8	Richmond Radiator Co., pfd.	B	9	8	8¼
NP	44½	29	Ruud Mfg. Co.	C	29	29	29
NP	52¼	15	Spang, Chalfant & Co., com.	A	23⅛	22½	22½
100	98	89	Spang, Chalfant & Co., pfd.	A	96	96	96
NP	39½	20	Time-O-Stat Controls Co., "A"	C	25½	25	25
NP	140	59	Union Carbide & Carbon Corp.	A	83½	78⅛	80
20	55⅞	12	U. S. Cast Iron P. & F. Co., com.	A	24⅛	21¾	23
NP	19	15	U. S. Cast Iron P. & F. Co., 1st pfd.	A	17	16¾	17
NP	20	18¼	U. S. Cast Iron P. & F. Co., 2nd pfd.	A	19	18½	19
NP	62¼	35	U. S. Radiator Corp., com.	B & D	43½	43½	43½
100	100	100	U. S. Radiator Corp., pfd.	D	100	100	100
NP	65	15	U. S. Rubber Co., com.	A	25⅛	21⅛	23
100	92½	49⅜	U. S. Rubber Co., pfd.	A	50	47¾	49
100	261¾	150	U. S. Steel Corp., com.	A	173½	167¼	166¾
100	144¼	137	U. S. Steel Corp., pfd.	A	142	141½	141½
NP	22½	2⅛	Universal Pipe & Radiator Co.	A	3½	3	3
NP	49⅞	22	Walworth Co.	A	32	27⅛	31
NP	35	6½	Wayne Co., com.	B & C	9⅞	9½	9½
NP	46	25	Wayne Co., pfd.	B & C	29⅝	28½	29⅝
100	110	93	Wheeling Steel Corp., com.	B	110	108	110
100	135½	131½	Wheeling Steel Corp., pfd. "A"	B	133	133	133
NP	29¾	16	Williams Oil-O-Matic Htg. Corp.	C	16	16	16
NP	143	91	Youngstown Sheet & Tube Co.	A	109	108	109

*Where listed—

A—New York Stock Exchange
B—New York Curb Exchange
C—Chicago Stock Exchange
D—Detroit Stock Exchange
E—Pittsburgh Stock Exchange
F—St. Louis Stock Exchange
G—Cleveland Stock Exchange
H—Cincinnati Stock Exchange

†If there is no trading during current week, range represents last week recorded.

been accomplished, but there is now becoming apparent a livelier interest on their part to rehabilitate and to commit themselves for their definite requirements.

During the past fortnight, the majority of brass fittings manufacturers effected reductions in their prices to wholesalers. There have also been increases in makers' prices on soil pipe. Production is being maintained at most all plants at such level as to warrant expeditious delivery service to distributors.

Soil Pipe

Foundry representatives report a somewhat quickened interest on the part of jobbers. Stock bolsterings after inventory taking, even though consumption demand is light, have accounted for fairly good January tonnages being moved into this territory. Makers' quotations, unchanged and comparatively firm since the early part of last June, reflected an advance during the past week. Roughing-in processes of master plumbers account for only light turnovers of wholesalers' stocks. Shipments from sources are being executed in prompt manner.

Pipe—Brass, Steel and Wrought Iron

Distributors have displayed some inclination to establish more evenly balanced stocks after inventory taking had disclosed gaps in certain sizes. From mill representatives' viewpoints this rehabilitating movement has somewhat augmented their January volumes, but contains no real increase insofar as consumption demand is concerned. Contractors are drawing lightly from wholesalers' stocks, and the latter do not anticipate any immediate quickening of their turnover. Steel pipe shipments from jobbing points, mainly for heating installations, exceed dispositions of brass and wrought iron pipe. Mill prices are unchanged. Deliveries are being accorded in expeditious fashion.

Fittings

Manufacturers have been in receipt of wholesalers' orders in volume which is to be expected after inventory period, but this January so far has not granted the erstwhile post-inventory commitments which were extended over the first quarterly period. Jobbers' stocks are not being heavily taxed, for consumption needs are light. Cast iron fittings hold a comparatively good position for there is still a fairly good amount of heating work being done. Deliveries are being effected in manner which reflects the abundance of reserves at sources. The majority of full-line manufacturers have indicated reductions in their quotations of brass fittings.

Enameled Ware

New orders being placed with makers are mainly of replacement type or for specific operations, yet several factory salesmen report good receipts of carload orders from jobbers. Local warehouses of manufacturers are well stocked and are able to satisfy whatever emergencies might arise. Plumbing contractors are not extensively engaged in finishing work, and there are also lacking remodeling operations which formerly filled in the quiet season. Distributors however, are preparing themselves for the early spring which they regard optimistically. No price changes have been reported by producers. Deliveries are not delayed.

Pottery

Sporadic shipments in carload quantities are reported by potters, but their main concern seems to be in accumulating orders from those wholesalers who are just bolstering depleted items and who have special pieces on contractors' orders which must of necessity be shipped during the several weeks following. Jobbers' turnovers of staple bowls and tanks are comparatively light for plumbing contractors find some limitation in their installations. Makers' prices are firm, no changes having been announced during the past several weeks. The average potter has a large enough stock of staples on hand to easily grant quick shipment requests.

Plumbers' Brass Goods

While some jobbers have deemed it expedient to contract ahead for their first quarterly requirements in consideration of the strength of prices maintained by producers, business transacted for immediate shipment from sources has been comparatively light. Neither cast nor tubular goods are being consumed in quantities which arouse distributors' interests to largely augment their holdings. No price changes have been reported by makers but indications are of strength rather than infirmity. Factory reserves are such that delivery extensions are rarely reported.

Range Boilers

Demand for range boilers both from makers' and wholesalers' standpoints is rather inanimate. Jobbers placed some business at the opening of the year, and in the interim, but producers do not seem to be especially elated with their receipts. As in the case of other finishing commodities plumbing contractors' withdrawals are neither voluminous nor frequent. Price conditions, from manufacturing and wholesaling standpoints, continue firm and unchanged. Deliveries are prompt.

Boilers and Radiators

The character of contractor demand for heating equipment is somewhat different than it was a month ago, yet the decline has not been so abrupt as to seriously curtail activities. Makers and distributors have reported a good carryover from December, and radiation and boiler tonnages for early January are apparently not lacking to any extent when compared with the similar period of former years. Shipments are being effected in prompt manner from sources and local warehouses. Makers' prices are firm and unchanged.

SOUTHEAST

Moderate Demand Prevails—

Demand for plumbing and heating supplies during the past two weeks was light and business in this field is following closely construction trends, which are moderate. Sales in the month of December failed to come up to expectations of some sellers and January opened with little activity indicated. Most jobbers have accurately anticipated their needs and hence factory placed orders were of small volume. Most observers are optimistic, however, and believe that business will improve when the 1930 construction program gets under way. Most jobbers have been busy with inventory work and first-of-the-year adjustments. Stocks are being maintained in quantities to meet the current demand of the contractors and no delays have been experienced in securing supplies as ordered.

Since our last report makers of soil pipe, brass fittings and porcelain ware have announced changes in their prices to wholesalers.

Soil Pipe

Soil pipe turnovers were reported as only fair by most jobbers interviewed. Foundry-placed orders were in quantities sufficient to replace stock depletions, and wholesalers appear reluctant to carry large stocks. Manufacturers are shipping promptly. Since our last report most makers have announced an advance in their prices to jobbers.

Pipe—Brass, Steel and Wrought Iron

Demand for pipe was not of any appreciable volume as master plumbers' requirements were not heavy. Most jobbers state that December sales did not quite come up to expectations and business at the opening of January

The Metal Market

	Dec. 10	Average Oct., 1929	Average Aug., 1929	Average 1929
PIG IRON—				
No. 2 foundry, Chicago	$20.00	$20.00	$20.00	$20.00
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb.	1.85c	1.95c	1.95c	1.93c
*Blue annealed sheets, No. 13, Pittsburgh, per lb.	2.25c	2.35c	2.35c	2.17c
Black sheets, No. 24, Pittsburgh, per lb.	2.65c	2.80c	2.85c	2.85c
Galvanized sheets, No. 24, Pittsburgh, per lb.	3.35c	3.50c	3.55c	3.57c
TIN—				
Straits tin	47c			
LEAD—				
Chicago	6.25c			

The Old Metal Market

Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	15½c	Copper, light	13 c
Block tin	36½c	Copper, uncrucibled wire	14¾c
Brass, light	7¼c	Faucets and valves	9½c
Brass, heavy mixed	8½c	Lead, heavy	5½c
Brass, red	11¼c	Solder Joints	8¼c
Copper, crucible	15¼c		

NOTE: Prices are those quoted on Tuesday of this week.
* Comparisons are with old blue annealed base, No. 10.

showed little indications of any immediate gain. Wrought iron pipe is reported to be moving at a fairly good rate. Wholesalers' stocks are of sufficient quantity to insure immediate fulfillment of orders. No change in the price situation was reported and deliveries are regular.

Fittings

A fair demand for fittings prevailed in the past two weeks, according to reports. Jobbers anticipated their requirements rather accurately and hence factory orders were of small volume. Contractor demand is seasonal. A good assortment of fittings is being maintained by jobbers. Since our last report several full-line makers have announced reductions in their prices to jobbers.

Enameled Ware

Enameled ware movement into consumption was reported to progress at a fair rate. Wholesalers report a fair rate of turnover. There is a sufficient amount of finishing and replacement work to keep contractors fairly busy. Manufacturers are shipping supplies promptly. The market continues to hold firmly to current prices.

Pottery

Calls from master plumbers for pottery were light for the past two weeks, but nevertheless close to normal for this season, according to most observers. Jobbers are replenishing their stocks commensurate with sales, hence factory orders were of small volume.

Plumbers' Brass Goods

Buying of cast and tubular brass goods on the part of master plumbers was reported as moderately good. Wholesalers, generally, have a good assortment of tubular items and are ordering only where replacements are necessary to insure safe working stocks. Few future delivery orders were placed by wholesalers. Shipments are made promptly.

Range Boilers

Master plumbers' purchases have diminished considerably and range boilers continue to move into consumption at a low rate. Sales were reported as generally light throughout the territory. Wholesalers are holding their stocks to the minimum and are ordering in moderate quantities. Prices remain unchanged and shipments are made with regularity.

Boilers and Radiators

Activity among the heating and piping contractors continued at a seasonal rate during the past fifteen days and nothing of importance occurred in the way of deliveries or price changes. Jobbers are carrying stocks in proportions to care for the immediate requirements of the contractors.

PACIFIC COAST

January Business Is Moderate—

A moderate January business prevails in most of the Coast jobbing centers without any outstanding features. Distributors generally have well assorted although not heavy stocks of material and are able to take care of the trade's needs without delay. Distributors' prices to the trade, as a rule, are holding firm. Manufacturers are shipping without delay.

Soil Pipe

During the week most foundries announced a slight advance in the price of soil pipe which most Coast jobbers immediately reflected in their quotations to the trade. This resulted in bringing out quite a few orders for material which the trade was withholding placement until actually required and also developed some inquiries for future deliveries. Stocks in distributors' hands, while not heavy, are sufficient to take care of the trade's present needs without delay.

Pipe—Steel and Wrought Iron

Current business in steel pipe continues to be of a moderate nature, with the total volume about normal for this period of the year. The trade continues its policy of purchasing for immediate needs only. Distributors of steel pipe generally have ample stocks to take care of all of the trade's needs as they arise. Prices remain unchanged. Wrought iron pipe continues to move in a moderate volume with the trade purchasing only as the needs arise. Distributors of wrought iron pipe have stocks ample to take care of the trade's needs. Prices remain unchanged.

Fittings

Little if any increased activity is noted in the demand for cast iron, screwed malleable and drainage fittings which continue to move in moderate volume, with the trade purchasing mostly for immediate needs and in small lots to sort up stocks. Distributors generally are carrying stocks sufficient to fill all orders received promptly and can secure from manufacturing sources prompt shipment of stock. Prices remain unchanged.

Enameled Ware

The demand for enameled ware continues to be only moderate in volume, with the trade purchasing only such ware as is required for immediate use. Distributors generally have stocks sufficient to take care of all orders as received. Coast manufacturers are in a position to make prompt shipment of all classes of ware. Prices are unchanged.

Pottery

Little change is noted in the demand for pottery which at present continues to be only of a moderate nature. Distributors generally are carrying stocks sufficient to take care of the trade's present needs without delay. Coast potteries and manufacturers' warehouses are in a position to make prompt shipment of all classes of ware should the need thereof arise. Prices are unchanged.

Plumbers' Brass Goods

Plumbers' brass goods continue to move in a fairly good volume and de-

mand appears to be well maintained. Distributors are carrying stocks of sufficient quantity to take care of the trade's needs without delay, and can secure prompt shipment from manufacturing sources. Prices on this commodity vary somewhat in the different jobbing centers and are more firm in some than in others.

Range Boilers

A moderate demand for range boilers continues with little change noticed during the past fortnight. Distributors generally are carrying sufficient stock to take care of the trade's needs as they arise and are reordering merchandise in about the same volume as sales.

Walworth Co. Issues Earnings Report

The net earnings of Walworth Co., Boston, Mass., for the year past were about $6 a share on the 319,665 common shares that are outstanding after the acquisition last fall of the Westcott Valve Co., East St. Louis, Ill. Following the first quarter of 1928, when a net loss was shown, the six ensuing quarterly reports each disclosed a gain in net income over the preceding period until a high of $604,308 was reached in the quarter ending September 30, 1929.

◆

Appointed New England Representative

Andrew J. Morse & Son, Inc., 221 High street, Boston, Mass., have just appointed the E. Stanley Freeman Co., 15 Nevada street, Winthrop, Mass., as representative in the New England states for its line of tank fittings.

◆

General Electric Co. Reports Large Increase

An announcement has just been made by Gerard Swope, president of the General Electric Co., Schenectady, N. Y., that orders received during the year 1929 amounted to $445,802,519, compared with $348,848,512 for 1928, an increase of 28 per cent. The orders for the fourth quarter of 1929 amounted to $108,398,049, compared with $88,162,049 for the last quarter of 1928, an increase of 23 per cent.

◆

Completes Compilation of Ratings on Steel Boilers

Augmenting the ratings of cast iron boilers presented some time ago, the Heating and Piping Contractors National Association recently completed a compilation of ratings on steel boilers. The boiler output committee, a sub-committee of the committee on standardization of the association which is headed by George M. Getschow of Chicago, Ill., handled this work. The following are among the manufacturers whose rating sheets have just been issued: William Bros Boiler & Mfg. Co., Minneapolis, Minn.; Frost Mfg. Co., Galesburg, Ill.; Herbert Boiler Co., Chicago, Ill.; Heggie-Simplex Boiler Co., Joliet, Ill.; Kewanee Boiler Corp., Kewanee, Ill.; Oil City Boiler Works, Oil City, Pa., and Pacific Steel Boiler Corp., Waukegan, Ill.

The exhibit of the Minneapolis-Honeywell Regulator Co. at the New York Power show

◆

Buffalo Forge Co. Holds Stockholders Meeting

At the annual stockholders meeting of the Buffalo Forge Co., Buffalo, N. Y., held January 13, the following directors were elected: Edgar F. Wendt, H. W. Wendt, Jr., Charles A. Booth, Herbert S. Whiting and D. R. Marsh.

The Board of Directors elected the following officers: H. W. Wendt, Jr., chairman of the board; Edgar F. Wendt, president; Charles A. Booth, vice president; Edgar F. Wendt, treasurer; and Herbert S. Whiting, secretary.

◆

Domestic Stoker Co. to Hold Sales Meeting

The Domestic Stoker Co. of New York City has arranged its third annual sales meeting for February 17 at the McAlpin Hotel, that city. The plan calls for attendance at the conference by all of the company's distributors and dealers.

◆

Carrier Engineering Corp. Buys W. J. Gamble Co.

Carrier Engineering Corp., Newark, N. J., has consummated the purchase of W. J. Gamble Company, Allentown, Pa., sheet metal manufacturers. The acquisition involves a 9 acre plot of land and factory. The plant is under re-construction and when completed will be a monitor type building, affording the corporation 60,000 sq. ft. of floor space for the manufacture of its air conditioning equipment.

◆

Death of Harry L. Monroe

Harry L. Monroe, commercial vice president of the General Electric Co., Schenectady, N. Y., with headquarters at Chicago, Ill., died at Dallas, Tex., on January 7 following a long illness. Mr. Monroe completed 40 years of service with the company in September, 1928, six months after his election to the vice presidency. Mr. Monroe was born in Parkersburg, W. Va., in 1869. He entered the employ of the company in 1888, with the Thomson-Houston Company in Chicago. In 1890 he was transferred to the railway department, and in 1894 became a salesman operating out of the Dallas office of the General Electric Co. He was made manager of the railway department of the central district in 1905, and eight years later was named district sales manager, and later central district manager.

Photo taken at the annual sales conference of the Reading Iron Co., of Reading, Pa.

Reading Iron Co. Holds Sales Convention

The Reading Iron Co. of Reading, Pa., held its annual sales convention in Reading on January 7, 8 and 9, which was attended by the company's district sales representatives, its operating department heads, metallurgists, heads of sales departments and other executives. Those present were: Geo. H. Woodroffe, R. I. Fretz, R. J. Wenger, L. S. Bortz, J. K. Aimer, Raymond Hilton, Auld Thomas, R. E. Knight, H. D. Pollard, J. T. Crowe, O. L. McGinn, Arthur King, R. E. Young, W. J. McDonough, J. S. Davis, C. F. Courtney, Jr., C. T. Ressler, H. T. Hecht, James P. Roe, L. E. Thomas, George Johnston, W. H. Baers, Norman Sherer, W. F. Hoff, John G. Ross, R. A. Griffin, F. W. Deppe, P. N. Guthrie, Jr., N. R. Putnam, George E. Tyson, H. F. Mattern, E. P. Hannig, S. H. Blackwood, Wyman Howells, John H. Morse, Horace Stafford, A. J. Wolf, George D. Lain, R. W. Thompson, John F. Heil, R. J. Shornhorst, H. S. Carland, William Koch, Daniel J. Miller, William J. White, Allan M. Cullum, E. W. Thomas, Jr., F. M. English and A. R. Kinsler.

◆

Oster Mfg. Co. and Williams Tool Corp. Combines New York City Offices

In view of the amalgamation of the Oster Mfg. Co., Cleveland, Ohio, and the Williams Tool Corp., Erie, Pa., which was announced late last fall, the New York City offices of the two companies have been combined. The arrangement involved the removal of the office of the latter company to that of the former at 147 Fourth avenue. The personnel of each organization remains unchanged. Harold Thompson is New York manager of the Oster Mfg. Co. business, and David Moreinis continues in charge of the Williams Tool Corp. interests.

◆

Thomas Maddock's Sons Co. Moves Offices to New Plant

Thomas Maddock's Sons Co., division of Standard Sanitary Mfg. Co., Trenton, N. J., has removed its executive offices from the old factory to the new plant. E. B. Lane, sales manager of this division, has moved his offices to a newly erected showroom on Carroll street near Perry street. The advertising department, in charge of Oscar Riegel, will also be located at that address.

Paramount Plumbing and Heating Supply Corp. Moves

The Paramount Plumbing and Heating Supply Corp., New York City, has procured the three story brick building at 10 East 135th street for its new headquarters. The building, which runs through one city block to 134th street, has been completely renovated, new show windows added and delivery platforms constructed. The offices of the corporation are on the top floor, while the second floor and basement, all accessible by a new elevator, provide space for heavy materials. Steel bins occupy the first floor except for a broad space adjacent to the loading and unloading platforms, which is equipped with pipe racks. The entire floor area amounts to 25,000 sq. ft.

Organized in 1925 the firm established itself in a store and warehouse at 262 West 145th street which now becomes a branch. Sidney Samuels is president of the corporation and Harry Resnicow, secretary and treasurer. The former handles all purchases at the new headquarters, while the latter acts as manager of the branch. Walter Baer, heating engineer, is in charge of that department. Albert Friedberg is manager, while Louis Ackerman, Louis Levy and William Klenert comprise the sales force.

◆

M. S. Little Mfg. Co. Announces Appointment

The M. S. Little Mfg. Co. of Hartford, Conn., has just appointed John J. Lamont as manager of its Chicago office at 1020 Wrigley building, Chicago, and A. Milton Buck as southern representative with headquarters at 814 Fern street, Washington, D. C., to cover Virginia, Georgia, North and South Carolina, Florida, Alabama, Mississippi, Tennessee and New Orleans, La. Mr. Lamont has been connected with the company's general office in Hartford for some time, and Mr. Buck is president of the Virginia Chapter of the Plumbing and Heating Salesmen's National Association.

◆

National Industrial Exposition to Be Held in March

The National Industrial Equipment Exposition, which is to be held at the Stevens Hotel, Chicago, Ill., on March 3-7, will feature four classifications of factory equipment, including materials handling equipment, transmission equipment, factory operation requisites and management. During the same week will be held the National Management Congress and the Third Annual Materials Handling Meeting of the American Society of Mechanical Engineers.

◆

Walworth California Branch Moves

The Walworth California Co., a subsidiary of the Walworth Co. of Boston, Mass., has moved its Oakland branch to larger quarters at 2635 Peralta street, where the company will have 20,000 sq. ft. under one roof. F. Harold Gnarini is manager of the Oakland branch.

Industry Represented at Building Conference

In line with the effort to safeguard business stability, a building conference was held in Washington, D. C., under the auspices of the United States Chamber of Commerce, on January 21. Representatives of the Institute of Boiler and Radiator Manufacturers, of the American Oil Burner Association, of the Heating and Piping Contractors' National Association and of the Plumbing and Heating Industries Bureau were invited to attend the conference.

Others of the industry invited were H. W. Seymour, vice president, sales division, Crane Co.; H. M. Reed, first vice president of Standard Sanitary Manufacturing Co.; Herbert V. Kohler, vice president Kohler Co., and C. K. Foster, vice president, American Radiator Co.

◆

New York Salesmen Hear Council Plan

Holding a series of three meetings during January at the Murray Hill hotel, New York City, New York Chapter No. 1 of the National Association of Plumbing and Heating Salesmen, through William F. Weber, president-emeritus of the national organization, on January 10 presented before wholesalers of the Greater New York territory a plan for a council which is to comprise organized groups of manufacturers, jobbers, master plumbers, and heating contractors as well as salesmen. Through the council Mr. Weber, who is also secretary of the chapter, plans to eliminate many of the problems by which the industry is harassed. He is to present the same proposition before a mass meeting of wholesalers, plumbing and heating contractors, manufacturers and salesmen at a similar meeting on January 31 when definite action on the proposal is to be taken.

Joseph L. Spivak, president of the chapter, presiding at the first two meetings, gave a brief resume of the salesmen's organization before formally introducing Mr. Weber for the presentation of his council plan.

Charles J. Crockett, whose efforts during the past year or two have been devoted to educational work along merchandising lines among plumbing and heating contractors through wholesalers, responding to an introduction at the conclusion of the recital of the plan by Mr. Weber, said that he was impressed with the sincerity of the ambitious program and suggested that the salesmen first look to strengthening their own organization. In this latter respect he said, "The salesmen in the plumbing and heating industries do not measure up in quality and ability to those in many other industries." Further he said that selling in the industry should be made attractive to young college men and that the salesmen's organization should contribute its share toward this end.

Mr. Weber in response to this talk stated that jobbers in the Greater New York territory are at fault because of their supervision of salesmen's efforts which do not provide for any selling calls other than on contractors. He also stated that the chapter has tried to induce jobbers to sanction salesmen making calls on the public in co-operation with customer contractors without success.

John A. Hurley, credit manager of Pierce, Butler & Pierce Mfg. Corp., New York City, addressing the meeting, said that he is strongly in favor of the council and the building up of the chapter. Touching on credits, he said that the Jobbers' Credit Association is coming to

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RETURN UNITS—*using*
BURKS Super-Turbine PUMPS
A New Application of Two New Burks Pumps—
Will Not Steam-Bind ! ! !

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Write today for Bulletin No. 89 showing Prices, Capacities and Exceptional Performance of these Condensation Units.

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Originators and Exclusive Manufacturers of Burks Turbine-Type Pumps That Pump Air!

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NOTE THE BRASS DISC

Made of Refined Malleable Iron with Brass Seat Inserted in Place by Powerful Pressure So That It Cannot Become Detached.

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"A Distinctly Different Tank Ball"

You'll appreciate how really different the DUR-A-BAL* is after you've sold and used a few.

No swelling, no elongation, no distortion of any kind. Not in the least affected by any water.

From your jobber.

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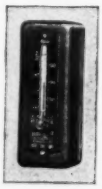

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Thousands have been installed—it is fool proof — trouble proof — nothing to oil — nothing to require service. It is guaranteed by this 40-year old manufacturer.

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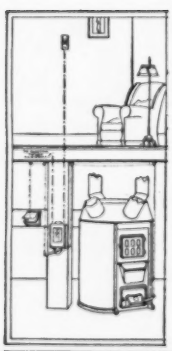

SHEER • COMFORT
heat Regulator

the point where it will aid the contractors in the matter of maintaining a credit bureau. Mr. Hurley also said that the wholesaler must work with the plumbing and heating contractor and that the contractor must get away from the idea of keeping the wholesaler away from his customers and accept selling help. Among others contributing thoughts to the meeting were Harry Cohen, Brooklyn jobber; Walter Heim and Gene Smith.

The manufacturers' meeting scheduled for January 16, because of deferment until January 31 at the Murray Hill hotel, replaced the regular monthly chapter meeting. Plans for the annual dinner party were discussed. The entertainment committee headed by Harry La Croix, has been authorized to proceed with the arrangements and, if possible, set Washington's Birthday as the date on which it is to be given. It was announced that the membership roster is being printed and that ways for increasing the chapter's membership are going forward. W. W. Thompson, of Minneapolis-Honeywell Regulator Co.; Frank P. McGinn of American Radiator & Standard Sanitary Corp., Standard Sanitary Mfg. Co. Division, and Jack Sekler of United Plumbers' Supply Co., Inc., were admitted to membership.

◆

West Virginia Convention Set for February

The Master Plumbers' Association of West Virginia, which has set February 3 and 4 for its next annual convention, has its program well in hand for that date. The convention city will be Clarksburg, West Virginia.

Henry A. Spencer

The present official personnel of the West Virginia association is composed of Henry A. Spencer of Clarksburg, president; R. H. Holtzworth of Huntington, vice president; and C. A. Munn of Clarksburg, secretary.

The board of directors includes: George W. Redeker of Wheeling, Charles Mumford of Fairmont, S. O. Johnson of Parkersburg, John A. Shanklin of Charleston, L. R. Maxwell of Bluefield, and Fred Eickert of Welch.

◆

Allen G. Rushlight

Allen G. Rushlight, head of A. G. Rushlight & Co., Portland, Ore., died at a local hospital January 6. He was born at Golden City, Colo., in 1874, but has lived in Portland since childhood.

Mr. Rushlight entered the plumbing and heating business in 1893. For several years he was associated with P. S. Lord and H. S. Hastorf under the firm name of Rushlight, Hastorf and Lord, plumbing and heating engineers. The partnership was dissolved about three

years ago, Messrs. Lord and Hastorf remaining in the old location at 371 Hawthorne avenue, and Mr. Rushlight engaging in business at 381 East Morrison street.

In his lifetime Mr. Rushlight was active politically, having served as mayor of Portland and was several times a state representative from Multnomah county in the state legislature. While in the legislature he worked consistently for the advancement of the plumbing and heating industry in Oregon. Notable achievements during his administration as mayor were construction of the Broadway bridge and the building of the new city jail.

◆

Minnesota Convention Set for February 4

The Minnesota Retail Plumbers' Association will hold its 1930 convention on February 4 and 5, at St. Paul, Minn. It is announced that a very successful meeting is expected.

Warren F. Chapman

Warren F. Chapman of Minneapolis is president of the Minnesota association; J. A. Daley of Rochester is vice president; S. B. Harvey, Minneapolis, treasurer; and E. R. Anderson, also of Minneapolis, is secretary.

The present board of directors consists of the officers named above, and Axel Peterson, A. A. Schmidt, M. Elsen, Carl Broman, Charles Northrup, C. J. Olson, H. W. Benson and H. Hanson.

◆

Manhattan Masters Plan Beefsteak Dinner and Dance

Deviating from a long established custom the Master Plumbers' Association of Manhattan, New York City, Division No. 2, is to have entertainment and dancing at the annual beefsteak dinner which it is planning to hold on February 5 at New York Turn Hall, that city. Heretofore this yearly gathering has always been a stag affair. Preparations are being made by Joseph R. Spellman, who is chairman of the committee comprising Henry Berg; Nathan Weinstein; Harry Segel; Andrew I. Green; Herbert Halloran; Malcolm Walsh; Ellis Jungman; F. Solomon, and Michael L. Cregan.

◆

Boston Contractors Hear Addresses on Certified Heating

W. H. Oleson, manager of the Heating and Piping Contractors Boston Association, and Ralph Franklin, chairman of the standardization committee of the Heating and Piping Contractors National Association, were the principal speakers at the luncheon meeting of the Massachusetts chapter, American Society of Heating

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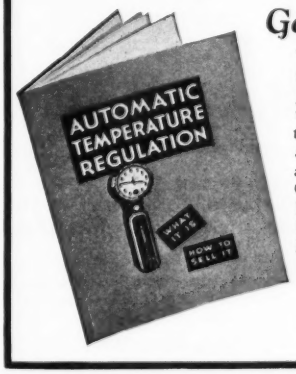

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They save money for owners and make money for you.

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Small capacity, hand operated systems for shallow or deep wells and cisterns, medium and large capacity outfits for operation by engine or motor, automatically controlled electric house pumps and direct water systems that do not require a pressure tank make up the Myers line which has over fifty years of pump building experience behind it to guarantee dependability and satisfactory service. Catalog No. HP24 shows complete line. Ask for your copy today.

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Pumps, Hay Tools and Door Hangers

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Damper Regulators
for
All Heating Boilers

There is a type and size of METAPHRAM Damper Regulator to meet every heating boiler requirement.

The Type "F", with 2″ Metaphram Expansion Wafers is a thermostatic regulator for hot water boilers and domestic water heaters.

The Type "D-2", with 10″ integral studded, self-collapsing Metaphrams, is for heating boilers of the larger sizes operating on either pressure, vapor or vacuum.

In between are the Types AA and A-2 for small, low pressure boilers; the Type B-2 and C-2 for boilers larger in size, requiring increased power to properly regulate draft and control combustion.

All Metaphram Regulators are extremely sensitive and powerful. New features recently incorporated in their design have increased their effectiveness greatly. The Type F works on changes as low as 5° in temperature; the pressure regulators on changes as low as 1 oz.

Not only is the Metaphram line complete to meet all damper requirements, but Metaphram Regulators are so practical in design and rugged in construction that they will work to the satisfaction of the heating plant operator under the most adverse conditions.

If you don't know the Metaphram line, clip the coupon, or write for copies of latest bulletins.

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National Systems of Heat Regulation and Humidity Control, Metaphram Dampers, Metaphram Motors, Industrial Thermostatic Devices, A-Jacks Steam Damper Regulator for high pressure boilers, Metaphram Damper Regulators for domestic steam, vapor, vacuum and hot water heating boilers, Metaphram Furnace Regulators.

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☐Bulletin F-100—Type F Metaphram Damper Regulator for hot water boilers.
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and Ventilating Engineers, held at the City club in Boston on Monday, January 13.

Mr. Oleson's subject was certified heating. He began by defining certified heating, then told of how nearly thirty cities in the United States have associations which can give owners certified jobs. The speaker emphasized the fact that certified heating is based upon definite standards, told of the checking of plans and the inspection of work by association engineers, and described the issuing of certificates and boiler plates to owners for whom certified heat installations had been made. Mr. Oleson described this service in some detail.

Mr. Franklin told the assembled engineers about the standards, outlining the difficulties which faced the standardization committee at the inception of the work and described the committee's methods of producing the present standards for the sizing of boilers, radiators and pipes.

◆

C. W. Wanger Addresses Philadelphia Development League

C. W. Wanger, president of Woodward-Wanger Co., Philadelphia, Pa., addressing a meeting, over which he presided, of the Philadelphia Plumbing and Heating Development League, held on January 17 in the Public Ledger building, that city, outlined essentials for success in the plumbing and heating business. Paramount of these requisites, he said, is the store location; a spot should be selected in a community where the residents would be numerous and of enough means to buy merchandise and services.

The next item of importance which Mr. Wanger covered was bookkeeping, concerning which he said: "The books should be adequate and trial balances should be reached every six months. Study should be given to the proper selection of the personnel of the organization and journeymen made to appreciate that the customer is the most valuable asset in the business." Another item of importance, he pointed out, besides training the journeymen to sell, lies in advertising. This he said should also be studied and a tie-up made with the national advertising of manufacturers.

George H. Sweet of the National Radiator Corp., Johnstown, Pa., spoke on the sixty day credit plan which is occupying the attention of the industry in Philadelphia. Outlining the proposition, he said that credits must be regulated as an economic means of stabilizing business.

A sales demonstration was given by A. A. Marks, Richmond Radiator Co., New York City, as the salesman, and Walter Raid, master plumber, as the buyer. Mr. Marks had selected a gas-fired boiler as the product around which his selling efforts were centered. Following this demonstration, Mr. Raid, later with Mrs. J. F. O'Brien as his customer, gave an illustration of how a sales effort should be made.

◆

A. R. Wilson Dies

A. R. Wilson, master plumber of Sherbrooke, Que., died on December 30, after a few days' illness. He had been in the plumbing and heating business since 1900. He was an Oddfellow, a Rotarian and took an active interest in matters pertaining to the welfare and growth of the city of Sherbrooke.

Wisconsin Selects Field Man

Lewis R. Friend Is Re-Elected President

Lewis R. Friend

THE Wisconsin Master Plumbers Association is to have a field organizer, the final step necessary for this move being taken at the organization's thirty-sixth annual convention, held at the Schroeder Hotel, Milwaukee, on January 14, 15 and 16.

At last year's convention the question of a field organizer was discussed from all angles and, as a result, the incoming board of directors was instructed to take what measures were necessary to obtain the services of an organizer.

Consequently, at this year's meeting the directors presented a resolution calling for the employment of Carl J. Marsh in this capacity. Under the terms of the resolution, which was passed with a unanimous vote, Mr. Marsh will be employed in conjunction with the Heating and Piping Contractors association and will devote one-half of his time to each association.

The convention was marked with a large number of constructive talks on the apprenticeship movement in the state, merchandising and discussions and addresses on the various phases of business management. A matter in which the members displayed considerable interest was that of selling gas appliances and the relations between the utility companies and the master plumbers. The discussion on this subject was opened by E. J. Sullivan of Kenosha, who urged that some definite action be taken by the association toward bringing this business to the master plumber.

Charles Pelunek

George F. Reeke of Green Bay was another who took an active part in the discussion. Mr. Reeke told of various meetings he had attended where the subject had been talked over. He urged the members to give the association's officers their assistance in matters pertaining to this subject and further requested that they make every effort to acquaint the Wisconsin Railroad Commission with the attitude of the master plumber in regard to the selling of gas appliances.

Lewis R. Friend of Milwaukee, president of the association, told what steps had been taken by the association in this regard. He read some reports from the railroad commission and explained that a law has been passed in the state compelling the utility companies to keep separate accounts of their sales of power and their sales of merchandise. Mr. Friend feels that this move on the part of the law-making body will act to the benefit of the master plumbers in the state.

Carl J. Marsh, the newly appointed field man, was asked to give his views, and he remarked that the law was the most important of any passed in some time as far as the contractor was concerned. Mr. Marsh feels that the contractor should adopt an attitude of investigation and assistance, rather than fighting. He suggested getting in touch with the utilities in each locality for the purpose of reaching some kind of an understanding. He said that for the present the best thing for the master plumber to do was to get to work and secure as much business in gas appliances as possible.

Committees Are Appointed

THE convention was opened by President Friend on Tuesday morning and the first speaker on the program was Walter W. Dusold, president of the Milwaukee association, who welcomed the delegates and visitors to the city. Mr. Dusold reviewed the program and told of some of the attractions the city offered its visitors. At this point President Friend read a telegram from National President John A. Quinn, of Philadelphia, regretting his inability to attend the convention, due to illness. A telegram was also read from Walter J. Kohler, governor of Wisconsin, who was unable to be present because of illness. Governor Kohler extended his best wishes for a successful meeting.

John P. McCoy, re-elected first vice president

Carl J. Marsh, newly appointed field man

Other Communications Are Read

A letter from Arthur Lahr of Lafayette, president of the Indiana Society of Sanitary Engineers, requested the Wisconsin association to make up a bowling team to compete with a team of master plumbers from Indiana. Two letters from the National Association of Master Plumbers were read,

MADDOCK'S

3 high quality toilets means
3 opportunities for profit in
3 different price classes

The Madera at $85, the Madbrook at $50, and the Maderno at $35. Thos. Maddock's Sons Pottery, Division of Standard Sanitary Manufacturing Company, Trenton, N. J.

Be sure the name
STOCKHAM
is on the fittings you buy

STOCKHAM FITTINGS

CAST IRON
Screwed—Flanged
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Screwed—Flanged

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LEADING CORPORATIONS—distinguished for the certainty with which they buy the most modern equipment and secure the most satisfactory service at lowest final cost—are installing Heggie-Simplex Electric Welded Steel heating boilers in steadily increasing numbers.

HEGGIE-SIMPLEX BOILER COMPANY
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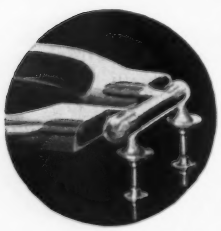
Whale-bone-ite Seat stands public toilet abuse . . . .



The Whale-bone-ite Seat and steel hinge molded integral with seat form an unbreakable unit. Seat is molded around laminated core of alternating-grain layers of hardwood. Proof against warping, cracking, splitting. Guaranteed for life of building. Costs no more. Ends replacement expense. Made by The Brunswick-Balke-Collender Co., Chicago.

Brunswick
WHALE-BONE-ITE
TOILET SEATS

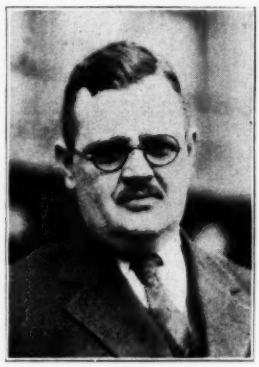
both of them dealing with the forthcoming national convention.

The following committees were appointed to administrate the affairs of the convention:

Credentials—Joseph Brah of Milwaukee, chairman, Walter Murphy of Sheboygan and D. H. Osborn of Beloit.

Resolutions—George F. Reeke of Green Bay, chairman, E. J. Sullivan of Kenosha, P. H. Schneider of Sheboygan, Thomas Long of Appleton, S. V. Hanley of Milwaukee, Louis J. Eron of Wisconsin Rapids and Henry Bergrud of Eau Claire.

Entertainment—Walter Tesch, chairman, Stanley



Robert E. Murphy

Maney J. Feeney

Dereszynski, George Vogel, H. A. Werner and George Bronenkant, all of Milwaukee.

Auditing—Hugo Lippert of Milwaukee, chairman, George Mueller of Oshkosh and Otto Marquardt of La Crosse.

Memorial—Robert Morrill of Beloit, chairman, W. A. Kramer of Waukesha and John Feiner of Racine.

Membership—Henry Smith of Racine, chairman, F. M. Branson of La Crosse and Joseph Stadler of Marshfield.

Nominating—F. C. Kuetemeyer of Milwaukee, chairman, E. Garrot of Green Bay and F. E. Grebe of Waupun.

Apprenticeship—H. C. Weber of Milwaukee, chairman, Walter J. Hyland of Madison, L. J. Schoenleben of Racine and Adolph Zurheide of Sheboygan.

Press—George F. Reeke of Green Bay, chairman, and Jacob Schuh of Milwaukee.

H. C. Weber, George Soergel, Louis R. Schmaus, Byron Graper and George Block, all of Milwaukee, were appointed sergeants-at-arms.

Grievance—Jacob Schuh of Milwaukee, chairman, Joseph Brah of Milwaukee, J. E. Farley of Wisconsin Rapids, Conrad Verbrick of Appleton, F. E. Grebe of Waupun, Jacob Zimmerman of Kenosha, George Reeke of Green Bay, John P. McCoy of Fond du Lac, H. E. Bergrud of Eau Claire.

The Wisconsin association had the misfortune of losing a number of its members during the year through death. At the close of the first morning's session memorial services were held for the departed members. M. J. Kelly of Oshkosh, Frank Shepard of Whitewater, Edmund Grassler of Milwaukee, Arthur

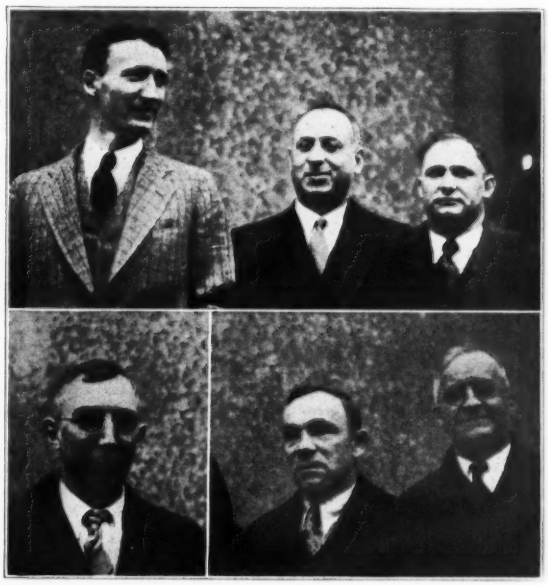
J. Maddock of South Milwaukee and Eugene Spickerman of Beloit. Each of the departed members was eulogized by a friend.

President Friend Is Re-elected

LEWIS R. FRIEND of Milwaukee was re-elected president of the association as was John P. McCoy of Fond du Lac, who was first vice president last year. Charles Pelunek of Milwaukee was re-elected secretary. E. J. Sullivan of Kenosha was elected second vice president, succeeding Jacob Zimmerman; while Joseph Wittig of Milwaukee was elected treasurer in place of E. F. Henoch. The officers compose the personnel of the board of directors.

George F. Reeke of Green Bay and Walter Tesch of Milwaukee were elected delegates to the forthcoming national convention at Boston, and their alternates will be Andrew Tweet of Green Bay and L. J. Eron of Wisconsin Rapids.

Each of the visitors present at the convention were introduced by President Friend, and each was called on to speak a few words. The visitors included: Henry T. Strenger of Lake Forest, Ill., president of the Illinois association; William Redieske of the Imperial Brass Mfg. Co., Chicago; C. A. Bolton of Chicago Heights, secretary of the Illinois association; M. L. McKay of Rock Island, vice president of the Illinois association; C. A. Dreier of Chicago; Thomas M. Dugan of McKeesport, Pa.; Peter Munn, secretary, and Rupert J. Weber, president, officers of the Chicago association. Robert E. Murphy of Chicago, national director; Maney J. Feeney of Philadelphia, Pa., secretary of the national association. A. E. Harroun, manager of the Minneapolis, Minn., association; F. W. Swanson of Des Moines, Ia., president and



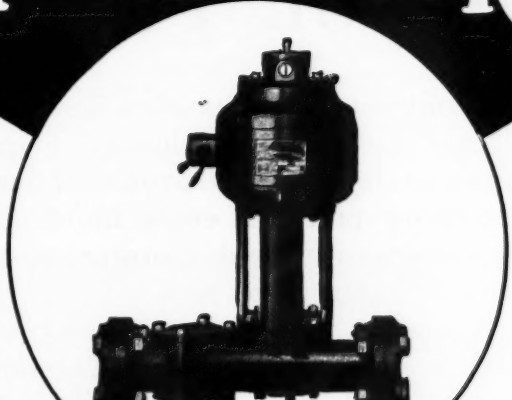
Top row: William Allan, Chicago Pump Co., Milwaukee; M. I. Weil, president of Chicago Pump Co., Chicago; J. P. Ditter, Kaukauna, Wis. Bottom row: Leonard G. Nussbaum of Madison, H. C. Weber of Milwaukee, chairman of apprenticeship committee, and C. G. Schumann of Milwaukee

Every Truly Up-to-Date Hot Water System Has A HYDROLATOR

For New Jobs

Very rapidly the entire heating industry is learning that no hot water heating job is complete or modern unless HYDROLATOR-equipped.

The positive, *forced* circulation made possible by the HYDROLATOR eliminates practically all possibility for sluggish or inefficient systems. When you put in a HYDROLATOR, you *know* that the job is going to work.



For "Sick" Jobs

No longer is there any excuse or necessity for "sick" hot water systems. The HYDROLATOR provides a quick, sure and inexpensive cure. It overcomes traps, short-circuits, pipe restrictions, etc.

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commissioner of the National Plumbing and Heating Institute.

To Present Resolution Before National Convention

A NUMBER of other resolutions besides the one calling for the employment of field secretary were passed by the convention.

One of these was adopted for presentation before the next convention of the National Association of Master Plumbers. This resolution was to the effect that, wherever a state association is carrying on an intensive organization and membership campaign, the national association remit or waive to the state association the per capita tax for the first year on all new members thus procured, to reimburse the state association for the expense incurred by said campaign.

Left to right: J. Manion, sales manager of Chicago Pump Co., Chicago; George B. Barron, Compound Injector & Specialty Co., Chicago; M. Mueller of Milwaukee

In another resolution the convention went on record as favoring the adoption of a rule to restrict the employment of apprentices to a basis of one apprentice to three journeymen.

A resolution to the effect that a committee be appointed to work with the manufacturers and wholesalers to eliminate the use of china as a material for handles on plumbing fixtures was also passed by the convention.

A resolution calling for the appointment annually by the state president of a committee of three members, to be called the cost data committee, for the purpose of promoting the use of good accounting systems and to report annually at the convention was referred to the board of directors for further action.

Represent the National Association

MANEY J. FEENEY of Philadelphia, Pa., secretary, and Robert E. Murphy of Chicago, director, were present as representatives of the National Association of Master Plumbers and brought greetings from that organization to the Wisconsin group. Both Mr. Murphy and Mr. Feeney had been attending the Presidents' and Secretaries' Conference in Chicago and made a hurried trip to Milwaukee in order to meet with the Wisconsin members.

Mr. Feeney explained that he was present as a pinch hitter for John A. Quinn, national president, who is ill at his home in Philadelphia. Mr. Feeney said that while Mr. Quinn had been confined to his home for the past eight weeks, he was glad to report that the president was now on the road to recovery. The

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The contractor who handles Enterprise Brass Goods is never limited to new construction for his profit. There's Enterprise profit in every building in his community and Enterprise performance gets it for him.

It will get it for you, too, because Enterprise meets every demand for beauty and utility and it meets it at a price that is never anything but reasonable.

You owe it to yourself to investigate Enterprise, to be familiar with its many fine construction features and its cost. Write now for full particulars or ask your jobber.

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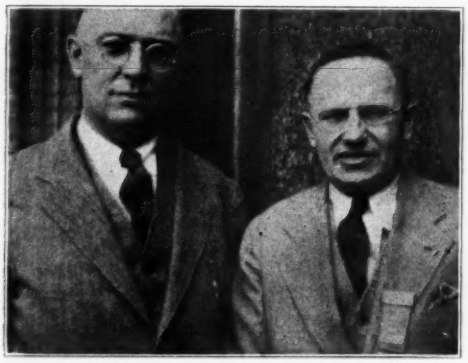
speaker explained the method used by President Quinn in appointing his board of directors, by zones, and that he was holding each director responsible for his particular zone. Secretary Feeney reported that all national committees and directors are functioning 100 per cent and at the same time issued a request that the state secretaries reply more promptly to correspondence. He said the committee working on the trade practice rules was making good headway.

In closing Mr. Feeney devoted some time to the forthcoming national convention and, after telling in detail of the plans for this meeting, urged a large attendance.

Mr. Murphy in his address went into considerable detail as to what the national association had been doing since the time of the last convention. He referred to the various resolutions adopted at that meeting and told what action had been taken on them.

In speaking of the Boston convention, Mr. Murphy said that President Quinn had appointed a committee of fifteen to take care of the details for this meeting and that it was the hope of the administration to make this year's convention the largest ever held. In closing Mr. Murphy read a letter from C. W. Wanger



O. A. Waskow and L. R. Schmaus, both of Milwaukee

of the Woodward-Wanger Co., Philadelphia, who is chairman of the educational committee, in which Mr. Wanger outlined the plans of his committee.

Outlines Plans of Bureau

STRESSING in his talk the need for some fundamental thinking by all three branches of the industry, E. L. Flentje, manager of the Plumbing and Heating Industries Bureau, Chicago, told something of what the organization he represents proposes to do during the coming year. He said that the bureau had come to the conclusion that its merchandising aids have been ineffectual due to the chaotic conditions within the industry, and that the man who attempts merchandising is doing so in the face of great difficulties.

Mr. Flentje feels that the time has arrived when merchandising cannot be talked of in vague terms, but that first the industry must be put in order so that the contractor who makes an honest, sincere effort to bring in business is properly rewarded. He referred to the trade practice rules recently adopted by the manufacturing and wholesale divisions of the industry, stating that these rules are evidence that the manufacturers' and wholesalers' correctives can only be made by some fundamental thinking. He said that the move by the two contracting branches for a trade practice conference was a good one.

George F. Reeke of Green Bay, Joseph Brah and Peter King, both of Milwaukee

The bureau feels, Mr. Flentje said, that the subject of credits is not an isolated local problem, but instead is national. Also, that the contractor has never been accurately evaluated in terms of business getting ability, sales ability, credit, etc.

He remarked that a recent survey by his organization revealed the fact that the chief purchasing power in Milwaukee is concentrated among the association members. He stated that the manufacturers and wholesalers are in the grip of the same circumstances as the contractor, and that there are too many manufacturers, wholesalers and contractors in business today. This number can only be cut down, he ex-

Left to right: Walter Dusold, president of Milwaukee association; Walter Tesch of Milwaukee, chairman of entertainment committee; and Joseph Wittig of Milwaukee, newly elected treasurer

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An improved type of unit heater, in suspended and floor mounted types.

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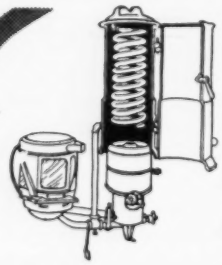

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QUICK, easy, cheap
Holds for the life of the line—any pressure, any temperature, iron, brass, or copper pipe. Get Smooth-On Clamps and Smooth-On No. 1 from nearest supply house or from us.

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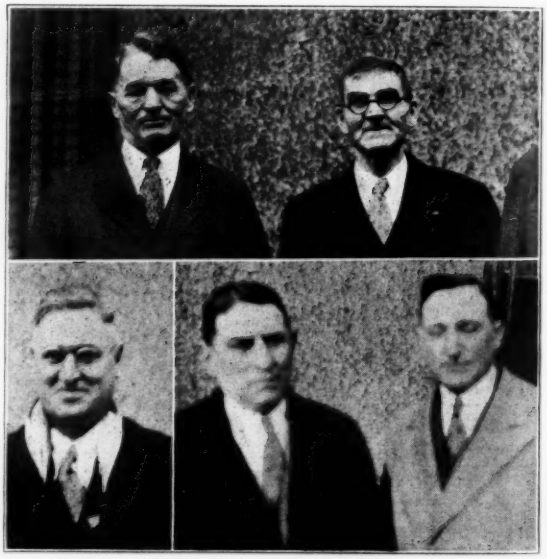
SMOOTH-ON

plained, through economic conditions and these conditions can only be brought about by an organized group.

The speaker pointed out that there is only a certain amount of business in any given territory. He feels that the idea of selected dealers is bound to come, pointing out that the supreme court has ruled that a manufacturer can select whom he wants to sell his products. Mr. Flentje added that the larger interests in the industry have committed themselves in principle to the idea of selective distributors.

Zone Officers Report

A. TWEET of Green Bay, President of the Fox River Valley Association, reported an average attendance of about 45 per cent at the meetings of



Top row: A. F. Schoenoff of Menomonie, J. H. Peppard of Manitowoc, Wis. Bottom row: F. D. Branson of La Crosse, J. B. Sullivan of Stevens Point, Mike Kubisiak of Wisconsin Rapids

his organization. He said cost accounting was one of the principal topics discussed at these meetings, and expressed the opinion that this is an extremely important phase of the contracting business.

D. H. Osborn of Beloit, president of the Southern Wisconsin Sanitary Club, said that interest in his zone had been lagging but that of late he noted an improvement.

Otto Marquardt of La Crosse, president of the La Crosse zone, stated that his organization had held three or four meetings, but that they found it difficult to get the members from the small towns to attend. Mr. Marquardt said that in his opinion a field organizer was very much needed to increase the interest.

L. J. Eron of Wisconsin Rapids, president of the Wisconsin River Valley Sanitary Club, said a reorganization meeting had been held on May 18 and that he could safely report good progress in his section of the state. Mr. Eron said that at the last meeting the members of the Wausau and Stevens Point locals had been brought back into the organization, and he thanked Mr. Friend and Mr. Schuh for attending the meeting and lending their assistance.

In the absence of Henry Bergrud of Eau Claire, president of the Chippewa River Valley Sanitary Club, R. O. Bartingale, a member of the organization, told what activities were taking place in the territory. Mr. Bartingale said that their zone had not functioned for some time, and that they experienced trouble in getting the members from the small towns to attend the meeting. He explained that a picnic had been held during the summer and that business was fairly good in the territory.

At the conclusion of these reports President Friend stressed the importance of paying more attention to business during a time of depression than at any other time. He said it was up to the contractor to hold the protection that he now had.

An interesting address was delivered by Dr. Stewart Scrimshaw, professor of industrial relations, Marquette University, Milwaukee, the subject being "Plumbers and Progress." After a few introductory remarks the speaker remarked that plumbing is based upon progress and without progress there would not be any business for the plumber. He stated that change is the normal experience of mankind and that the plumber as well as other people must not only accept it as normal but must anticipate and desire it.

He cited experiment, standards, planning of work, and the maintaining of standards, or co-operation, as the principals of scientific management, all of which,

Left to right: H. J. Bauer of Milwaukee, T. M. Dugan, National Tube Co., McKeesport, Pa., and C. A. Bolton of Chicago Heights, secretary of Illinois association

he said, can be applied to the plumbing business in the same way they have been used by industry.

In closing the speaker urged the master plumbers to continue their progress and to have faith in the apprenticeship work.

"Welding as it applies to the plumbing and heating industry" was the subject of a paper read by D. H. Smith of the Air Reduction Sales Co., New York City. The company's moving picture "The Magic Flame," which shows in detail the actual welding process, was shown following the talk. The members evidenced a great deal of interest in the picture and the talk and at the conclusion of the program asked Mr. Smith a large number of questions on the subject of welding.

Entertainment Committee Has Splendid Program

TOO much praise cannot be given the members of the entertainment committee for the splendid manner in which they arranged for the entertainment

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by Jarecki
are clean, structurally sound, with the sort of threads that please the men and speed up production.... A complete line at your service...carefully made, thoroughly inspected and promptly shipped.
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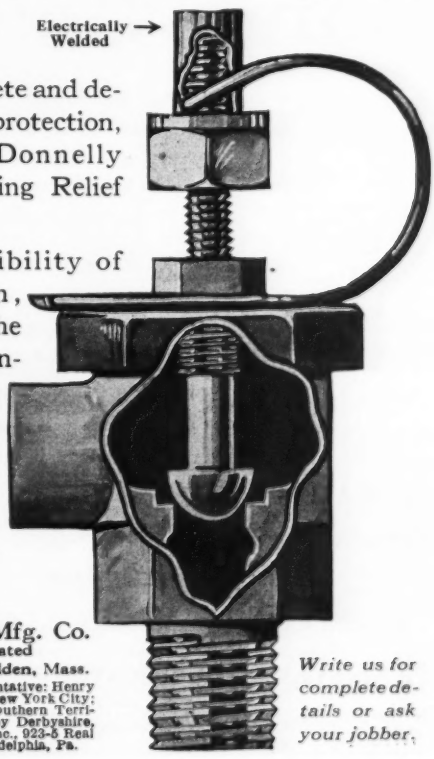

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The possibility of corrosion, rust and the other agencies which sometimes cause failure are eliminated in the Donnelly.

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29 Mills St., Malden, Mass.
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She'll see at once how Moores facilitate cleaning, how they improve the appearance of the room and how they prevent the radiator becoming a dirt trap.

Order Moores from your jobber. They're easy to install and the wide scale of adjustment provided insures the job being done right the first time.

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Moore RADIATOR HANGERS

Range Boilers

TANKS *for* Automatic Heaters

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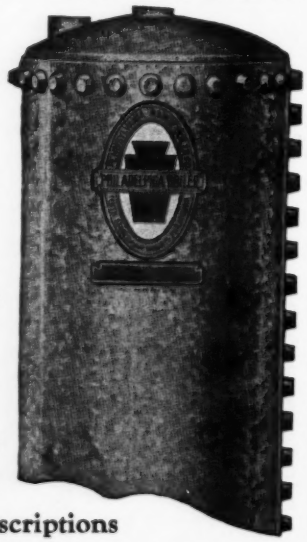

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of the visitors to the convention. The committee was headed by Walter Tesch, who was assisted by Stanley Dereszynski, H. A. Wegner, George Vogel and George Bronenkant.

The feature event in the line of entertainment was, of course, the annual banquet and dinner-dance which was held on Thursday evening, the last day of the convention. Dinner was served at about seven-thirty and during the entire meal the diners were entertained with singing and dancing of a high caliber. Later the tables were cleared away and the approximate five hundred who were present spent the balance of the evening dancing.

The ladies had a separate program. The day of arrival there was a reception at the Schroeder Hotel. The next day a luncheon was held at the Elks club. On Thursday the women went on an inspection tour through the plant of Roundy, Peckham and Dexter Co., followed by luncheon and bowling at the Elks club. That evening they returned to the hotel for the banquet.

Tell of Apprenticeship Work

WALTER SIMON, supervisor of apprenticeship training, Industrial Commission, Madison, gave a number of pointers on the proper training of plumbing apprentices. He explained the necessary attitude on the part of the apprentice, the parents, the employer and the vocational school.

The speaker said apprenticeship in Wisconsin is actually a part of the school system. He stated that the majority of plumbing apprentices in the state are indentured, adding that some action should be taken in regard to the indenturing of adult helpers as well as minors. Mr. Simon also pointed out the need of establishing a definite ration of apprentices to journeymen, suggesting one apprentice to every three journeymen as a fair ration. Before the convention adjourned a resolution was passed embodying this suggestion.

M. M. Hanson, itinerant plumbing instructor, Fox River Valley, addressed the meeting on plumbing apprentice training in the state.

He said prior to 1925 school instruction for apprentices was carried on by three agencies, the Milwaukee Vocational school, Milwaukee Technical high school and through a regular plumbing course given by the University of Wisconsin, extension division. In 1925 a new type of school training for apprentices was started, Mr. Hanson said, and it was termed "itinerant instruction."

The speaker pointed out that the itinerant idea of instruction is supported by the Smith-Hughes act. He feels that even with excellent apprentice material, the results of school training will be poor unless a systematic course of instruction is provided.

Mr. Hanson said it is not the object of instruction in the vocational schools to prepare the learner for the journeyman's examination, but rather to teach him the theory of the trade based on the Wisconsin state plumbing code. In closing he emphasized the importance of apprentices and journeymen reading the trade papers, stating they are the source of information on new methods and new products.

Plumbing Code Tabulations

(Continued from Page 82)

branches connect with the building drain or are less than 3 ft. from the wall of the building, shall be tested by the water or air test. Conductor branches on the outside system may be tested in connection with the building drain.

"GARAGE AND DRAINAGE SYSTEM: The same tests and inspection of the plumbing and drainage system for a garage or any part of a garage shall be made as provided by this code.

"TEST OF WATER DISTRIBUTION SYSTEM: Upon completion of the entire water distribution system, it shall be tested and proved tight under a water pressure of not less than the maximum working pressure under which it is to be used.

"CERTIFICATES OF APPROVAL: Upon the satisfactory completion and final test of the plumbing system, a certificate of approval shall be issued by the chief inspector of plumbing to the plumber to be delivered to the owner.

"AIR TEST OF DEFECTIVE PLUMBING: The air test shall be used in testing the sanitary condition of the drainage or plumbing system of all buildings where there is reason to believe that it has become defective. In buildings condemned by the proper administrative authority because of insanitary conditions of the plumbing system, the alterations in each system shall not be considered as repairs, but as new plumbing. Oil of peppermint, ether or smoke may be used to locate leaks and defects in the system."

The foregoing is an extensive consideration of the subject of tests, but according to our judgment it is not too extensive. There may be other codes having as thoroughly drafted sections on the subject of plumbing tests as the Mobile code contains, but we are not aware of them, and feel that the Mobile code sections present a good model to work from.

Modern Guides in Plumbing Installations

(Continued from Page 53)

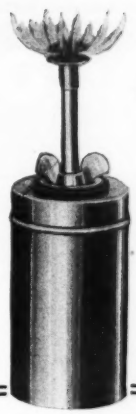
Disagreement in Lavatory Discharge Practice

Another feature concerning Fig. 9 that we do not agree with, is the disposition it makes of the waste discharging from the lavatory.

As anyone well knows, who has had much to do with automobile garages, mechanics working in them are much in the habit of washing off the grease and dirt from their hands and arms, with a plentiful supply of gasoline. They also empty pans of gasoline in which parts have been washed, into lavatories,—we have seen it done.

The garage lavatory then, discharges a considerable amount of gasoline, as a general thing. Should this fixture then not discharge to the garage catch basin, where its gasoline may be intercepted? As connected in Fig. 9, however, the gasoline from the lavatory discharges direct to the sewer.

As we have pointed out before in other articles, a



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Gives eight times the light of a candle. Cheaper and more convenient to use than candles. Does away with dripping wax. Burns two to three hours with one filling of gasoline. Absolutely safe.

If your jobber has not stocked these we will supply you.

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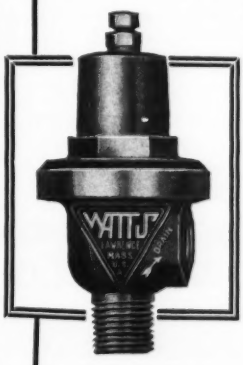

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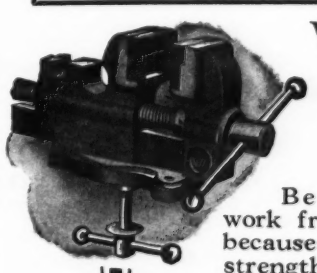

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AT $75, this New Type complete 210-gallon-per-hour Fairbanks-Morse Home Water System is unmistakably the greatest value ever offered.

It is automatic with all working parts enclosed in a handsome lacquered casing. This tremendous value, made possible by Fairbanks-Morse quantity production and world-wide distribution, will mean extra profits for the dealers that handle them.

Write now for complete information before someone else in your territory gets the franchise. Address Dept. I-1.

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A Quality Product

A boiler with which you can outsell the unlicensed plumber.

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New Pipe Nipples

Ware Pipe Nipples are made from *new* pipe and *how* they are made! Anyone who has used them will tell you that they are made to speed up work and make it safe.

Ware Pipe Nipples are cartoned in easily handled packages. They can be stored in small space and the right size always quickly found.

You can be sure of perfect sizes and accurate threading always when you use Ware.

Ware Coupling & Nipple Co.

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very large majority of cities apparently allow garage lavatories to discharge directly to the house drain, and thence to the sewer, rather than demanding the

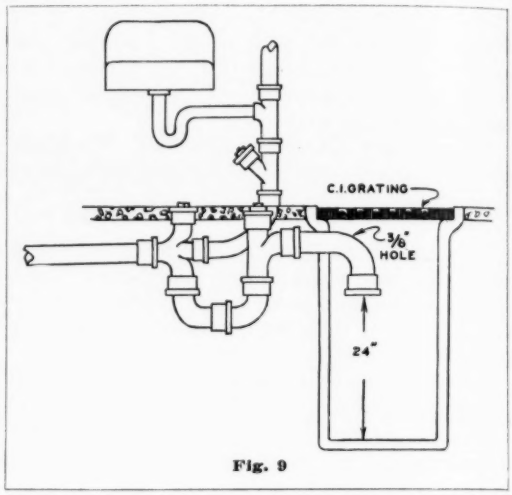


Fig. 9

correct practice we have pointed out. Why this practice is so common we do not understand, and we shall be glad if anything that we say may help to overcome it.

Those Who Make No Mistakes

It is better to keep on doing things and making an occasional mistake than it is to keep on doing nothing and never having any errors charged up against you.

Insulation Factors in Calculating Radiation

(Continued from Page 58)

B.t.u. of gas per cu. ft.—530.
Cost of gas per M cu. ft.—75c.

Month	Estimated Uninsulated	Estimated Insulated	Actual Consumption March 1, 1927, to March 1, 1928	Outside Temperature
Oct.	26,000	19,100	13,700	56.3
Nov.	48,000	36,000	26,900	47.6
Dec.	70,000	53,400	49,200	35.7
Jan.	76,000	57,300	59,000	31.8
Feb.	67,000	50,700	50,200	29.2
Mar.	54,000	40,800	41,600	41.3
Apr.	37,000	28,200	29,200	46.6
May	18,000	14,100	15,700	55.3
	396,000	299,600	285,500	

Estimated savings in operation by insulation—110,500 cu. ft. of gas or equivalent.

Estimated savings in operation by insulation @ 75c per M cu. ft.—$82.70.

Case 1, see Fig. 3, is presented to illustrate, from actual experience the effect of insulation on fuel consumption and heating plant requirements. It gives a definite form and approach for the heating contractor in proving that houses which will not heat will not, more often, because of poor construction rather than because of faulty heating installations.

The figures give the initial cost of the insulation and both the initial and operating savings to offset the insulation investment. This is typical in new house installations.

Insulation Applied in Old Buildings

Case No. 2

Uninsulated			One layer of insulating material in roof		
Sept. 25, 1924	10,200	$ 8.17	Sept. 24, 1925	800	$ .98
Oct. 27	27,800	21.67	Oct. 27	49,800	38.17
Nov. 24	50,400	38.62	Nov. 24	72,000	54.82
Dec. 23	100,400	76.12	Dec. 23	97,000	73.57
Jan. 23, 1925	132,200	99.97	Jan. 25, 1926	119,400	90.37
Feb. 24	104,800	79.42	Feb. 27	94,200	71.47
Apr. 2	98,800	74.92	Mar. 25	71,200	54.22
Apr. 24	28,400	22.12	Apr. 27	70,000	53.32
May 25	37,400	28.87	May 26	25,000	19.57
June 25	5,600	5.02	June 24	10,000	8.32
		$454.90			$464.81

Fuel requirements due to weather conditions were 12 per cent greater during 1924-25 than in 1925-26. Apparent savings—10 per cent.

In Case 2, an actual example of applying insulation to a home already built is featured. The results given in this case as well as in other cases which lack of space does not permit to show were obtained from an exhaustive investigation of the gas company and a number of insulating companies in Chicago. The value of insulation in the ceiling, alone, of the home is brought out very clearly by this example because data were obtained showing the amount of fuel required before the insulation was installed, as well as after.

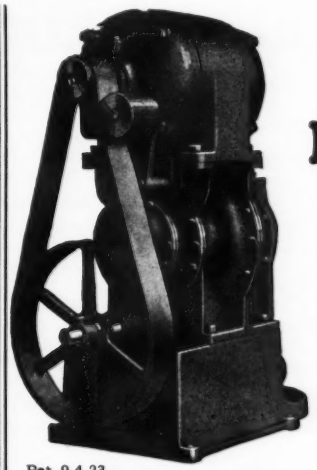
Case No. 3

House—560 sq. ft. hot water rad.					
Uninsulated			One layer of insulation board laid in attic floor		
Oct. 27, 1925	27,800	$ 21.67	Sept. 28, 1926	3,200	$ 3.22
Nov. 27	52,400	40.12	Nov. 4	28,800	22.42
Dec. 28	70,200	53.47	Dec. 6	55,000	42.07
Jan. 26, 1926	66,400	50.62	Jan. 4, 1927	58,000	44.32
Feb. 26	63,400	48.37	Feb. 3	60,000	46.42
Mar. 26	53,800	41.17	Mar. 8	47,400	36.37
Apr. 27	48,200	36.97	Apr. 6	29,200	22.72
May 28	15,200	12.22	May 5	20,400	16.12
June 26	4,600	4.27	June 6	13,800	11.17
July 28	400	.60			
		$309.48			$244.83

Fuel requirements were 9 per cent less in 1926-27 than in 1925-26. Apparent savings—16 per cent.

Case No. 4

Stucco house—455 sq. ft. hot water radiation.					
Uninsulated			Attic floor insulated with 4 inches of fill		
Sept. 24, 1924	11,400	$ 9.37	Sept. 24, 1925	1,200	$ 1.36
Oct. 24	20,200	15.97	Oct. 26	27,800	21.67
Nov. 24	40,000	30.82	Nov. 24	39,200	30.22
Dec. 23	62,800	47.92	Dec. 23	46,000	35.32
Jan. 23, 1925	70,000	53.32	Jan. 25, 1926	58,200	44.47
Feb. 24	62,200	47.47	Feb. 24	45,000	34.57
Mar. 26	50,400	38.62	Mar. 25	39,600	30.52
Apr. 28	30,600	23.77	Apr. 24	36,800	28.42
May 25	26,200	20.47	May 25	18,600	14.77
June 24	5,000	4.57	June 24	4,800	4.42
July 24	1,600	1.74	July 28	1,000	1.17
		$294.04			$246.91



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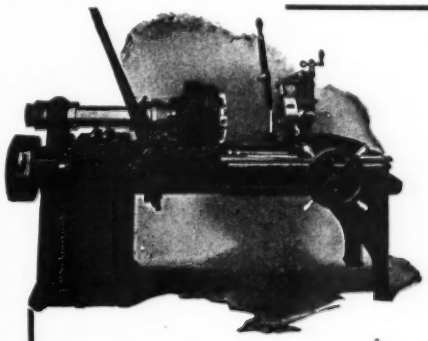

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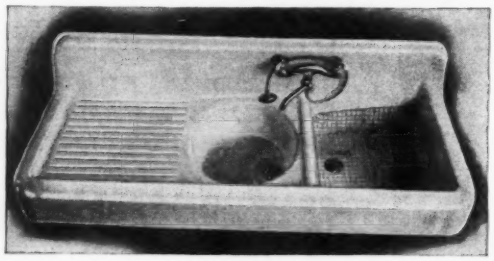

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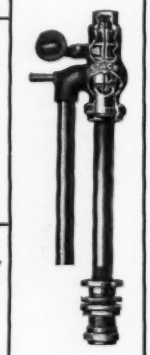

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BOSTON

Fuel requirements due to weather conditions were 12 per cent greater during 1925-26 than in 1924-25. Apparent savings—33 per cent.

Insulation Applied to Building During Construction

Case No. 5, St. Louis, Mo. See Fig. 2

3⅝in. Walls and 4 in. Ceiling Loose Fill					
Year	Degree Days	H. H. Consumption Actual Est. on D. D.		Diff. Actual and Est. Consumption	Per Cent Diff. from Est. Cons.
1925-26	4,775	330,000	377,200	47,200	12.5%
1926-27	4,562	349,000	359,900	10,900	3.04%

$$\text{Cubic foot gas per degree day} = \frac{360{,}000}{4{,}560} = 79$$

Degree days based on actual degree day between meter reading.

1925-26		House Heating Consumption		1926-27		House Heating Consumption	
Month	Degree Days	Actual	Estimated on D.D.	Month	Degree Days	Actual	Estimated on D.D.
Nov.	712	46,600	56,200	Sept.	53	3,400	4,200
Dec.	1,025	69,600	81,000	Oct.	218	21,400	17,200
Jan.	987	61,400	78,000	Nov.	727	56,800	57,400
Feb.	675	48,800	53,300	Dec.	981	71,200	77,500
Mar.	764	57,800	60,400	Jan.	1,027	75,600	81,100
Apr.	551	40,200	43,500	Feb.	577	44,200	45,600
May	61	6,200	4,800	Mar.	581	43,400	45,900
June	.....	.....	.....	Apr.	310	23,400	24,000
				May	88	9,600	7,000
	4,775	330,000	377,200		4,562	349,000	359,900

Preliminary Estimate

	Uninsulated	Insulated
Estimated consumption	494,000	360,000 Cu. Ft.
Degree days	4,560	4,560
Windows	37,884 heat loss per hr. B.t.u.	37,884
Doors	2,257 heat loss per hr. B.t.u.	2,257
Walls	53,574 heat loss per hr. B.t.u.	20,484
Ceilings	27,552 heat loss per hr. B.t.u.	13,776
Infiltration	26,347 heat loss per hr. B.t.u.	26,347
	147,614	100,748

, Stucco, metal lath, studs, lath and plaster.

Walls, stucco, metal lath, studs filled with loose fill; lath and plaster. Ceiling 3 in. loose fill over lath and plaster.

◆

Campaign Against Violators of Sanitary Laws

As a result of a campaign against the unlawful installation of plumbing materials by persons not licensed, furthered by the Master Plumbers' Association of New York City, thirty summonses have recently been issued by the authorities. Of the first four cases to come to trial before Chief Magistrate William McAdoo, who in an opening statement from the bench stressed the importance of maintaining plumbing installation standards to safeguard public health, two were held over for trial. Fred Clark, field representative of the association, filed the complaints after thorough investigation and Assistant District Attorney James T. Neary examined a number of witnesses. This is the first fully aggressive step of the association against violators of the sanitary laws.

Ohio Convention Set for February 4

The Ohio State Association of Master Plumbers is looking forward to one of the most satisfactory conventions in its history when the members of that organization foregather at Springfield on February 4, 5 and 6. Headquarters for the convention will be at the Shawnee hotel.

Edward Maurer

The present official body of the Ohio association is composed of Edward Maurer of Cleveland, president; William H. Grabowsky of Canton, vice president; and Eb Ellen of Cleveland, secretary-treasurer.

◆

San Francisco Masters Elect Officers for 1930

The Master Plumbers' Association of San Francisco, Inc., San Francisco, Calif., at its annual meeting, elected the following members as directors for the new year: William J. Monihan, Joseph Rohr, Charles Noury, A. G. Trezise, Frank Sasso, J. V. Young, Charles Mayer, James H. Pinkerton, V. J. Peterson, N. J. Cohen, Alexander Coleman, Jack Camp, William P. Goss, Louis Bernstein, S. J. DiVecchio.

Following their usual custom, the directors selected officers to serve for the ensuing year at their first meeting. The new officers are: J. V. Young, president; Charles Mayer, vice president; Alexander Coleman, treasurer; Jack Camp, corporation secretary.

Mr. Young, who succeeds William J. Monihan as president, has long been identified with association affairs, having served as vice president in the year just closed. He is also president of the Plumbing and Heating Club of San Francisco and the Bay Cities. Treasurer Alexander Coleman has for many years been untiring in association work.

◆

Rockford Association Elects Officers

The Master Plumbers' Association of Rockford, Ill., at its annual election of officers, elected V. M. Merchant, president; E. O. Bergun, vice president; Joseph Wilson, secretary; and Albin Broquist, treasurer.

◆

Philadelphia Master Wins Prize in "Mummers Parade"

First prize in the comic float division of the "Mummers Parade," which has for many years been an annual New Year's day affair in Philadelphia, Pa., was won by Charles A. Finnie, member of the master plumbers' association of that city. Mr. Finnie, who attached two automobiles back to back to represent the open air taxicab of "Amos 'n' Andy," with fourteen other men all in costumes designed to represent the various characters in the famous radio broadcast.

◆

Central Pennsylvania Officers Elected

The Central Association of Master Plumbers of Pennsylvania, Lancaster, Pa., has elected the following members to the official staff: James H. Lutz, Jr., president; Christian Bachofer, vice president; and C. K. Will, secretary-treasurer.

$100 in Cash for a Name!

The CREST MANUFACTURING CO. INC. will pay to any plumbing or heating contractor or their employee, $100. in cash, for a name which best describes the CREST Grey Rubber Compound Tank Ball.

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Send your names to: CONTEST DEPARTMENT,

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Apprentice Selection Topic at Wisconsin Conference

Left to right: L. R. Friend, F. R. King, and W. Simon

JUDGING from the discussion at the fourth statewide conference for the promotion of educational opportunities in the plumbing industry of Wisconsin carried on by those who have had and are having extended contacts with apprentices, the greatest problem facing the Wisconsin plumbing industry in its educational effort is that of selecting the apprentice. This problem is said to constitute the fourth stage in the development of their educational program and undoubtedly will occupy the attention of all concerned for the coming year at least, if not longer.

As in the case of the conference recently held, the broad outline of the previous stages of development of this work was indicated in the previous three conferences. The first conference was held during January 1927, and introduced the movement, the purpose being to get information on the various plans of apprentice training in the plumbing industry and acquaint those concerned with the work. The second conference was held during February, 1928, and members were concerned chiefly with the matter of obtaining and causing to function properly, the local apprentice committees which constitute one of the integral, if not the most important, agencies in carrying on the educational program. The third conference was held in January of 1929, and was devoted to the question of a text book on instruction for the apprentice including an outline of procedure in training. Thus, the normal and well developed growth of the movement has been reflected and outlined briefly, has been 1.—Introduction; 2.—Operation of apprentice committees; 3.—Development of a text and procedure of instruction; and 4.—Selection of apprentices. The selection of apprentices and the working out of a method for same probably will demand the attention of the leaders all of the coming year; possibly longer. Future activities will be in the form of extending the present circuits of organized instruction for apprentices, adding new ones to those already established and obtaining and causing to function properly new apprentice committees. After that it will be a matter of carrying on the work begun.

H. C. Weber, M. M. Hanson and R. E. Hasselkus

The 1930 conference was opened and presided over by E. E. Gunn, Jr., assistant director of the Wisconsin state board of vocational education who spoke on "The Growth of the Itinerant Plan of Plumbing Instruction." Wisconsin now has four itinerant circuits each of which extends to include a number of cities. Later in the program reports from the instructors covering these circuits were given.

F. O. Maeder pointed out that in Sheboygan, in addition to the general instruction course, they have a short course in welding of 10 hours for master plumbers and journeymen which is divided into five evening sessions of 2 hours each and which is designed to give those who attend a general knowledge of the subject and of the underlying principles. Later, a course in welding for journeymen plumbers and steamfitters is to be given in the same city which course will be covered in 20 lessons, one lesson being planned for each week. H. Pommerenck, another of the itinerant instructors, indicated that in Madison there, also, is a course in welding for steamfitters. Diverging from the subject at hand, for a moment, he pointed out the need for a universally accepted standard of fixture units. He emphasized the idea that a fixture unit is an arbitrary measure the same as is 16 ounces equal a pound. The increasing tendency toward tall buildings and the resultant increasing loads placed on stacks and vents therein makes uniformity important to avoid misunderstandings and possible failures of installations.

M. M. Hanson, itinerant instructor in the Fox River Valley circuit reported that 45 per cent of the apprentices in that circuit have a high school education and that in general they only encourage boys to become apprentices who have had the advantage of at least 2 years of high school instruction. This is significant in that it indicates the trend in the selection of the future members of the plumbing industry. A. J. Matthais, in presenting his report told of progress in apprentice instruction in West Allis, Wis.

A considerable amount of time was devoted to a dis-

cussion of the registration of apprentices. Frank R. King, director of bureau of plumbing and domestic sanitary engineering, in his paper entitled "Administration of Registration and Vocational School Attendance With Relation to Examination for Plumbing License," stated that "As a means of carrying out the intent of the registration section of the rules providing for statewide regulation of plumbing apprentices, a registration blank was prepared and mailed to every plumbing shop in the state of Wisconsin with a letter of instruction. The majority of shops and apprentices employed responded promptly by filling out the cards. Others delayed or neglected entirely. It is believed that there are still from 50 to 100 unregistered apprentices in the state." In this respect, Mr. King further stated that "Since the adoption of the rule on August 13, 1928, 486 apprentices have registered with the state board of health. The registration shows that this number of plumbing apprentices is distributed in 64 cities of Wisconsin." He also called attention to the need for co-operation on the part of the plumbing instructors, inspectors, and master and journeymen plumbers in bringing about complete registration of all apprentices. This general subject led to a discussion of the common abuses in the employment of apprentices. Instances were referred to where in some plumbing shops a ratio of as many as four apprentices to one journeyman exist. Indications were that in some exceptional cases the ratio is even higher. A chart featuring registered plumbing apprentices, journeymen and masters by cities as of January 1, 1930 showed that in Wisconsin the ratio of apprentices to journeymen is one to four; the ratio of apprentices to masters is one to two; and the ratio of masters to journeymen is one to two.

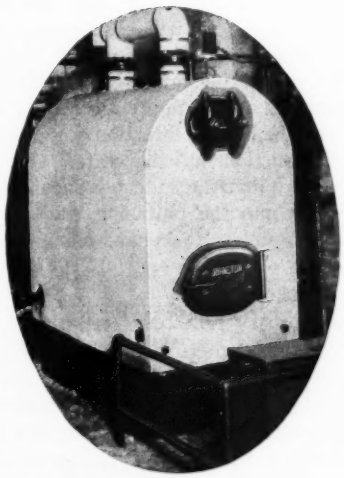
In the matter of the present status of text material, R. L. Welch spoke of the progress which is being made and indicated that the two sections, one on theory and the other on practice, are being worked into their final form and will be released in the near future.

H. C. Weber, chairman of the Milwaukee apprentice committee discussed the subject of local apprenticeship committee plans pointing out the difficulties encountered in Milwaukee where only one local committee is assigned such a large territory. A remedy was suggested in the example of Oakland, California, where the city is divided up into several sections and a separate committee serves each section. It is believed that Milwaukee, in time, will adopt this plan.

P. T. Schoemann responded with the observation that the mechanics which are being turned out today are not as capable as the mechanics which were turned out ten or fifteen years ago. He placed the blame for this on the highly specialized training to which the apprentice is subjected, and which, according to his experience, has stifled initiative and ingenuity. He contended that masters and the journeymen are the greatest apprentice educational factors in the state. When the apprentice system is abused and more apprentices are taken into a shop than can be trained properly, "If we have the welfare of the trade at heart our problem becomes an ethical one," according to L. R. Friend, president of the Wisconsin Master Plumbers Association.

The seriousness of this problem and the need for better selection of apprentices was brought out forcibly by W.

Do You Stop With Half a Sale?



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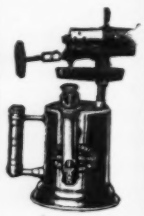

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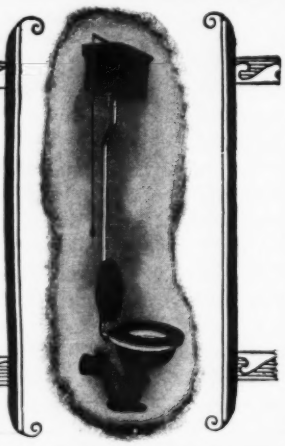

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Simon when he called attention to the fact that recent passing grades of the apprentices in taking their journeyman examinations were lower than ever before.

According to P. King of Milwaukee who spoke on the subject of plumbing apprentice and its relation to the plumbing business, "One hears frequent complaints that the productivity of apprentices is unprofitable, that much of their wages is reflected in non-productive labor. We hear further a general complaint about the shortcomings of journeymen, their lack of mechanical skill and initiative and ingenuity, that they require too close and extended supervision. Also, that they fall short of expectations in their contact with the customer and consumer, that they lack interest in the theory of the trade and neglect to apply themselves toward a full mastery of the underlying principles concerning the many and varied phases of the business.

"And, when we go on to the business side, to the dealer and contractor branch of the business, there too we hear much complaint about the lack of business methods, haphazard estimating, lack of adequate bookkeeping, lack of cost finding and accounting, broadly speaking a general lack of understanding and practice of modern business methods. I am not prepared to say how far these criticisms may be warranted. I believe, however, that there is much just cause for criticism in the direction indicated and that the underlying cause rests chiefly upon the indifferent manner in which apprentices have been chosen in the past, and the lack of direction that has been accorded them after induction into the craft." He further expressed the belief that the industry should agree that none should enter into the plumbing trade as apprentices or as learners unless they have a high school education.

◆

Alameda County Masters Adopt New Income Plan

Beginning January 1, the Merchant Plumbers Association of Alameda County, with headquarters at Oakland, Calif., voted to abolish the fixture tax plan, adopting in its stead a levy of 1½ per cent of its membership's gross yearly volume, as a source of income.

Business Manager V. A. Edgeworth reports eminently satisfactory progress during the year just closed, with excellent attendance featuring every meeting.

Convention Dates

January 27-30, 1930.—A. S. H. V. E.—The thirty-sixth annual meeting of the American Society of Heating and Ventilating Engineers to be held at Philadelphia, Pa.

January 28 and 29, 1930—IOWA—The annual convention of the Iowa Master Plumbers' Association, to be held at Sioux City.

February 3 and 4, 1930.—WEST VIRGINIA—The annual convention of the West Virginia State Association of Master Plumbers to be held at Clarksburg.

February 4 and 5, 1930—MINNESOTA—The annual convention of the Minnesota Retail Plumbers' Association, to be held in St. Paul.

February 4, 5 and 6, 1930.—OHIO—The annual convention of the Ohio State Association of Master Plumbers to be held at Springfield, with headquarters at the Hotel Shawnee.

March 4 and 5, 1930—NORTH DAKOTA—The annual convention of State Association of Master Plumbers of North Dakota, to be held at Minot, North Dakota.

March 10 and 11, 1930—KANSAS—The annual convention of the Kansas Master Plumbers' Association, to be held at Salina, with headquarters at the Hotel Clayton.

March 10, 11 and 12, 1930.—INDIANA—The thirty-fourth annual convention of the Indiana Society of Sanitary Engineers, to be held at Fort Wayne.

March 11 and 12, 1930—MAINE—The annual convention of the Maine State Master Plumbers' Association, to be held at the Falmouth hotel, Portland.

March 17 and 18, 1930—MISSOURI—The annual convention of the Missouri State Association of Master Plumbers, to be held in St. Louis.

March 25, 26 and 27, 1930—MICHIGAN—The annual convention of the Michigan State Association of Master Plumbers, to be held at the Hotel Hayes, Jackson, Mich.

April 7 and 8, 1930.—ARKANSAS—The annual convention of the Arkansas Master Plumbers' Association, to be held at Fort Smith.

April 7 to 12, 1930.—AMERICAN OIL BURNER ASSOCIATION—The seventh annual convention and exposition of the American Oil Burner Association, to be held at the Stevens Hotel, Chicago, Ill.

April 8 and 9, 1930—NEW YORK—The annual convention of the New York State Master Plumbers' Association, to be held in New York City.

April 21 and 22, 1930.—COLORADO—The annual convention of the Colorado Society of Sanitary and Heating Engineers, to be held at Denver, with headquarters at the Hotel Albany.

May 5 and 6, 1930.—FLORIDA—The ninth annual convention of the Florida State Association of Master Plumbers and Heating Dealers, Inc., to be held at Bradenton.

May 5, 6 and 7, 1930—N. P. S. A.—The annual convention of the National Pipe & Supplies Association, to be held at Pinehurst, N. C., in the Carolina hotel.

May 12 and 13, 1930.—OKLAHOMA—The annual convention of the Oklahoma State Association of Master Plumbers, to be held at Shawnee, with headquarters at the Hotel Hilton Phillips.

May 12, 13, 14, 15 and 16, 1930—CALIFORNIA—The annual convention of the State Association of Master Plumbers of California, to be held at Sacramento. Convention headquarters will be at the Hotel Senator.

May 19, 20 and 21, 1930—PENNSYLVANIA—The annual convention of the Pennsylvania Master Plumbers' Association, to be held at the Bellevue-Stratford hotel, Philadelphia.

June 24, 25 and 26, 1930.—N. A. M. P.—The forty-eighth annual convention of the National Association of Master Plumbers, at Boston, Mass. Sessions at Grand Hall of Mechanics Building. Headquarters at Statler Hotel.

COMING TRADE EVENTS

January 27, 28, 29, 30 and 31, 1930.—The International Heating and Ventilating Exposition, to be held at the Commercial Museum, Philadelphia, Pa.

February 27, 1930—The annual banquet of the Master Plumbers' Association of Jersey City, N. J.

March 3-7, 1930.—The first showing of the National Industrial Exposition, to be held at the Hotel Stevens, Chicago.

June 23-27, 1930.—Exposition in connection with the annual convention of the National Association of Master Plumbers, in the Mechanics Building, Boston, Mass.

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ARE GOOD

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Plumbers tell us why they prefer to install ALBERENE STONE LAUNDRY TUBS

"The only comebacks I ever get on Alberene Laundry Tubs are orders from *new* customers, sent in by people who use them."

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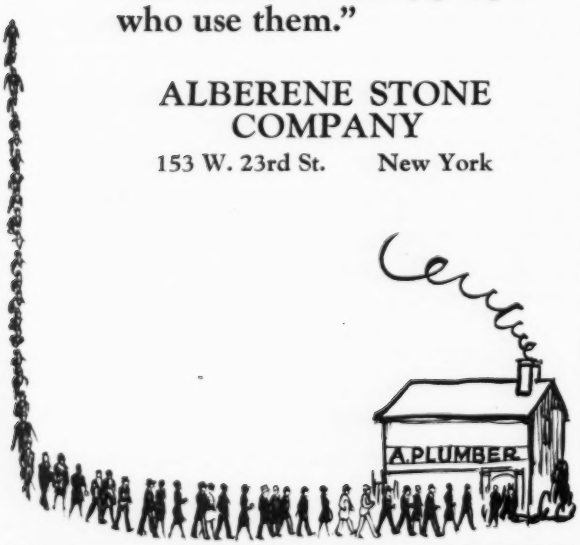
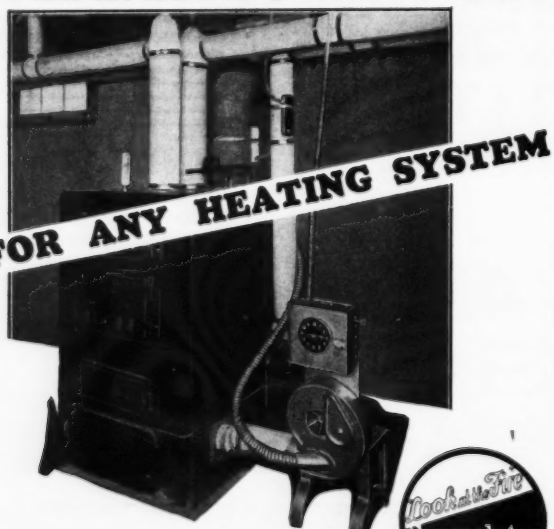
153 W. 23rd St. New York



THERMOLATOR



THERMOLATOR is going into thousands of home heating systems of every type yearly and it is not only doing a real job, but materially increasing Heating Contractors' profits. It is not "specialty equipment" but rather a necessity for the proper and economical burning of coal that should be figured into *every* job. Investigate Thermolator now! Let us prove what it will do and how you can profit by it.

THERMOLATOR CORPORATION
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National Association Plans Progressing

(Continued from Page 117)

committee, under Mr. Wanger's guidance, will play an important part in accomplishing this, in addition to the educational program for master plumbers to be given by this committee on Tuesday and Wednesday, June 24 and 25.

The Boston section of the special educational committee, headed by Mr. Gillespie, will take steps to see that the display windows in plumbing establishments, department and other retail stores in Boston and vicinity, are decorated with plumbing fixtures in color, heating equipment that is both serviceable and attractive, and other similar educational and advertising displays. These features were discussed at a meeting of the special educational committee held on Friday, January 3, at which meeting were present: Messrs. Wanger, Gillespie, Drake, Feeney, Creviston, Flentje, Kohler, Glen, LaCentra, Dibble, Donoghue, Nolan, Chesnut, Franklin E. Darling of Fall River, Mass., and John J. Downey, Maurice Lynch, John Slattery, Francis L. Daly and William Weiss of Boston.

The convention and exposition committee devoted a great deal of time to consideration of floor plans for the exposition hall, type of booth and similar facilities for the national manufacturers who contemplate displaying their goods here in June.

There will be between 175 and 180 booth spaces in departments "A" and "B" of the exposition hall. These spaces will be, for the most part, 10′ x 11′ in dimensions and larger than the average spaces at expositions in recent years. Owing to the greater number of booths available, it is expected that the prices will also be lower per square foot than have prevailed in recent years.

The booths will be of different design than anything in the past and will give the visitor an opportunity to see the whole display at one glance, as the side walls will be, for the most part, only about four feet high. The rear wall of the booth will be the only one on which plumbing fixtures will be hung.

That the advantages of the Boston gathering are appreciated by the manufacturers all over the country, is evidenced by the volume of letters which have already come to Chairman Donoghue from leading manufacturers, stating that they are looking forward to exhibiting in Boston and asking that, as soon as the information is available, they be furnished with the exposition details.

The committee has every confidence that not a space will be left unsold at the time the exposition opens and it is possible that the supply will be cleaned up some weeks before the convention date. The fact that Andrew J. Curtin, who for many years has been an exhibitor at previous conventions and who, in his capacity as a master plumber, was chairman of the convention committee when the gathering last met in Boston in 1908, has been made chairman of the exhibits committee insures for the exhibitor every facility and consideration that he could desire in connection with his display in Boston in June.

Presidents *and* Secretaries Discuss Association Problems

Conference group adopts manual as official guide

E. L. Flentje, manager, Plumbing and Heating Industries Bureau

IN THE hope of aiding each other in the solution of association and business policy problems, the presidents and secretaries of organizations of contractors in the plumbing and heating industries, foregathered for their eighth annual three-day conference, at the Congress hotel, Chicago, January 13, 14 and 15. The conference was held under the auspices of the Plumbing and Heating Industries Bureau.

With George H. Drake of Buffalo, N. Y., vice president of the National Association of Master Plumbers, acting as chairman, the meeting was opened with addresses by Walter Klie of Cleveland, O., president of the Heating and Piping Contractors National Association, and Maney J. Feeney of Philadelphia, secretary of the National Association of Master Plumbers, representing President John A. Quinn of Philadelphia, who was too ill to be present.

Departing from the custom of previous years, there was no prearranged program; the meeting was turned over to the presidents and secretaries themselves instead of being controlled more or less by the representatives of the bureau. This tended to promote a greater initiative on the part of the assembly to discuss the problems that were brought up as the meeting progressed. On the first day of the meeting the officers of the heating associations and the officers of the plumbing associations held separate sessions.

Probably the most significant matter to come up for discussion during the meeting was that of adopting the fifty thousand word manual, prepared by the Plumbing and Heating Industries Bureau, to serve as a reference book for those actively engaged in organizing and operating local associations. In addition, the conference brought out discussions on merchandising, bookkeeping, credit systems, the employment of field secretaries, how to conduct an association, securing the enactment of legislation, time payment selling, an outline of the bureau's new plan of operations and various other topics of interest to the contracting branch.

Discussion of the Manual

THE manual, which attempts to define the association in the broader picture of national trade development work; to show the association in its relationship to other groups within our industries; and to explain how an association can be organized and conducted, was taken up part by part and discussed by the conference group. E. L. Flentje, manager of the bureau, read sections of the manual and then asked for any comments from those present.

Among other suggestions on the operation of an association, Section Two of the manual contains examples of purpose clauses which are to serve as guides for both master plumbers' associations and heating and piping contractors' associations, showing the manner to follow in framing general and specific purpose clauses for an association. This section, particularly, was endorsed by G. T. Watson of Indianapolis, Ind., secretary-manager for the local master plumbers' association, and by A. E. Harroun, manager for the Minneapolis association.

The discussion of purpose clauses, as outlined in the manual, led into a general consideration of what really constitutes the fundamental purposes of an association. Adolph Weiss, secretary of the Associated Plumbing Contractors of Cleveland, O., said that, in his opinion, an association should have facilities for furnishing credit procedure, which opinion was amplified by B. Y. Kinzey, manager of the Heating and Piping Contractors Cleveland Association, who also reviewed the work carried on by his association office. R. L. Farrar, secretary-manager of the Association of Master Plumbers of Nashville, Tenn., said his association had successfully rendered this service to its members.

Other purposes of an association, as discussed by the assembly, were the problems of assisting in the enactment of protective legislation; seeing to its enforcement; to assist the members to become better salesmen; and aid the members in estimating and cost accounting. Mr. Drake, Mr. Feeney, Robert H. Pflug-Felder, secretary of the Master Plumbers' Association of Philadelphia;

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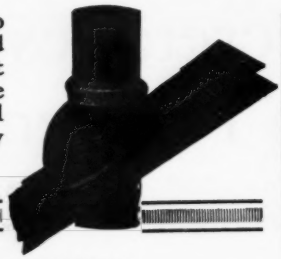

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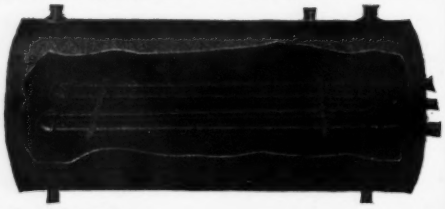

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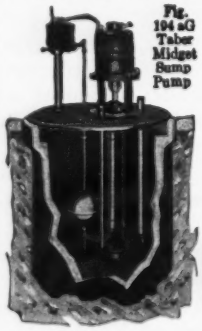


Fig. 194 aG Taber Midget Sump Pump

YOU sell, or ought to sell, satisfactory cellar drainage . . . protection from water damage to merchandise or goods stored in the basement . . . when you sell a sump pump installation.

Why permit a few dollars to stand in the way of 25 years of satisfactory service rendered by the Taber Midget Sump Pump? Write for description and prices. See page 909, Domestic Engineering Catalog.

TABER
TABER PUMP CO. *Est. 1859*
290 Elm Street, Buffalo, New York

Edward Monteath, president of the St. Louis (Mo.) Master Plumbers' Association; Henry McAuliffe, president of the Calumet, Ind., association, and Frank Bentley, secretary of the Washington, D. C., association, contributed informative comment on the various phases securing the enactment of legislation by relating what had been done in their local and state organizations.

Walter Klie, president, Heating and Piping Contractors National Association

The examination of the manual progressed to the section dealing with salesmanship, whether the contractor needs to be a salesman, instruction in salesmanship and subjects for classes in salesmanship, which prompted Mr. Watson to give an account of what had been done along this line in Indianapolis, where, he said, classes in salesmanship had been organized and conducted with considerable benefit to members of the association. William H. Grabowsky of Canton, vice president of the Ohio state association; Peter M. Munn, secretary-manager of the Plumbing Contractors Chicago Association, and Mr. Kinzey told of similar activities in their associations.

The last subject in the manual to be discussed was that of bookkeeping which elicited general comment from all sides. This comment, as summed up, indicated that the representatives present were in favor of each local association employing a competent man to install uniform accounting systems in the establishments of all the members and to supervise their operation.

At the conclusion of this discussion, the conference group voted to accept the manual as an official instrument for the use of association officers.

The Bureau's Plans for 1930

George H. Drake, vice President, National Association of Master Plumbers

CALLING attention to the fact that very little had been said about the bureau during the meeting, Mr. Flentje said that he wanted fifteen minutes in which to make clear the situation of the Plumbing and Heating Industries Bureau and its plans for 1930.

"We have passed through, in the last six months, a very critical period," he said. "It has been a battle to maintain the existence of this organization, which has been such a wonderful force in our industry. We have had the disheartening experience of having to lay off loyal members of the staff. We have seen supporting members fall away and leave us to our own devices. But there has been a nucleus of contractors, employes and supporters

which has stuck by us to the end. Our continuance for the coming year is certain.

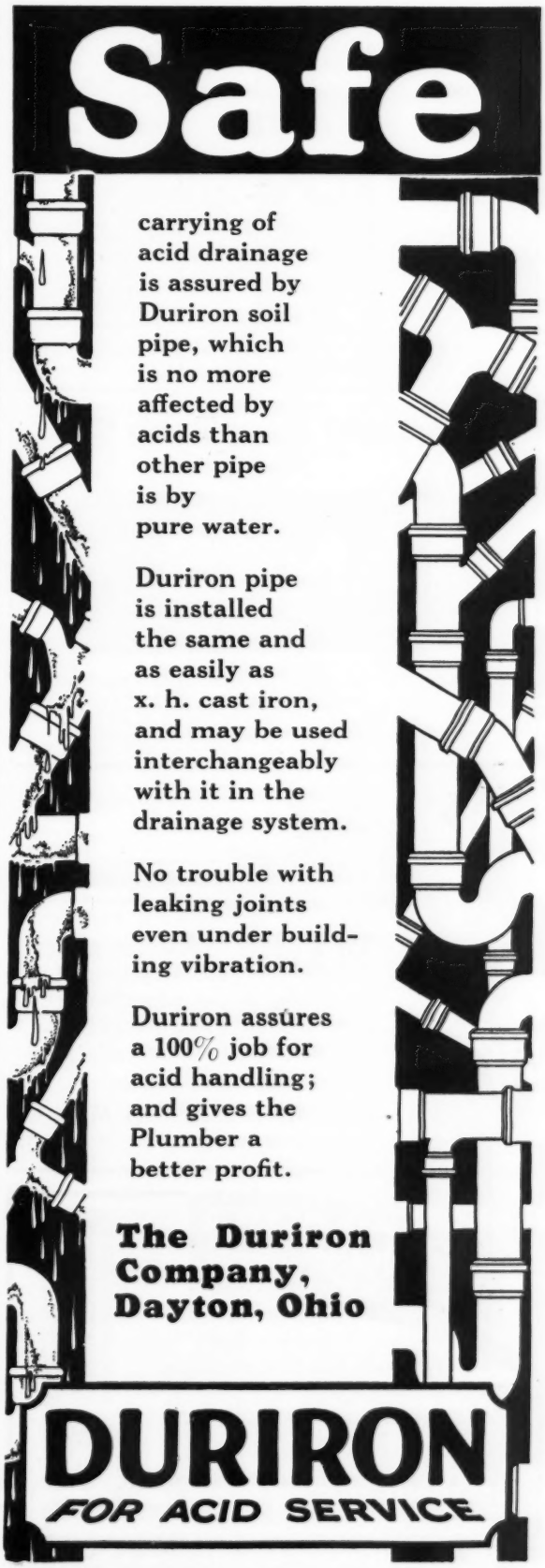
"We have been the victims of some very bad propaganda. Some of the small supporting members, in order to slip out of their financial obligation, have passed rumors around so that they could avoid paying us. We have also had the experience of erroneous reports, spread by those supporting us, in the hope that they might be able to reduce their subscriptions. But back of it all has been a loyal group which has made our continuance possible.

"When the bureau started its enlarged program in 1927, we were talking about a half-million dollars to be spent each year for three years. We raised part of that money. The program failed, not because it was not sound, not because it was not carefully planned, but because the industries were not ready for it. We spent hundreds of thousands of dollars in the Saturday Evening Post, believing that the industries were ready to go along with the constructive message. The public read, believed, and responded to those advertisements, but the industries were unprepared to greet the public when it expressed its interest. Thousands of people used to send in the coupons asking for further information. What happened to them? What happened to the material sent to manufacturers and wholesalers and contractors to help the game? It hit the waste paper basket with a sickening thud because our industries are not ready for an extended co-operative effort.

"We believe, in the bureau, that the time has come to face the realities of the situation. I believe that we have been kidding ourselves that we were full-grown business men, ready to do a job. We must face the fact that we are not. We have to set the background of our industries, organize it, decide upon certain fundamental policies, before going to the public. That is where the industry put the cart before the horse, in going to the public before it was ready.

"It is in that belief that the bureau in 1930 is not going to talk about five hundred thousand dollars, about the Saturday Evening Post; we are going to talk about house-cleaning. The bureau is the only organization for house-cleaning—the only organization where the three branches of the industry can sit down and talk about fundamental problems. You have your eastern and your western and your central bodies and all the rest, but those, gentlemen, are either commodity, regional or craft groups. They concern themselves with problems primarily of craft, regional or commodity interest. The bureau is the logical meeting place where representatives from those three branches can discuss industry problems.

"What are these industry problems? Well, first there is merchandising. It is only in the last year and a half that I discovered I was not telling the truth in all that I said about merchandising. Under the present chaotic conditions in our industry the man who attempts merchandising is attempting it in the face of almost insuperable difficulties. How much does it profit a man in the average large city to put in an elaborate showroom, a display window, to hire a salesman—what guarantee has he that the business he develops will redound to his profit? He may get a customer in his store and show him the commodity, or go to his home and give him a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Made of the finest materials available.

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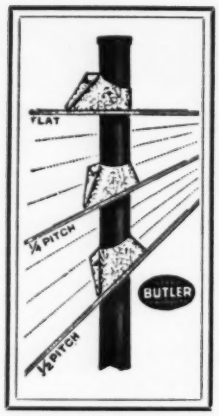

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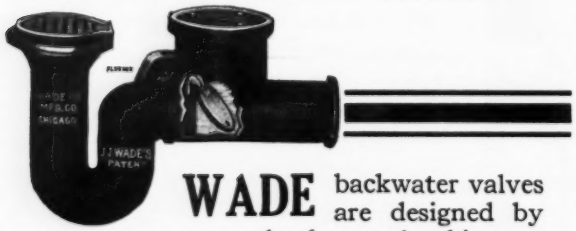

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Any wall or tube type radiator can be hung with one of the 3 styles of E-Z RADIATOR HANGERS. Only one bolt is necessary in wall for each hanger, and it does not have to be placed accurately as both height and lateral variations can be taken care of with the hangers. Easier, quicker and cheaper to install.

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Style "C"

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plan. But he has no assurance that the customer can not go around the corner and get a cut price on the job.

"The time has come when we have to stop talking about merchandising in vague terms, but we have to fix up our house so that the contractor who makes an honest, sincere effort to bring in business is rewarded properly.

"There are manufacturers who like this chaos. Why? Because the longer they can keep the contractor in ignorance of this state of affairs, that long they will have that many uninformed contractors upon whom to foist their merchandise. The intelligent manufacturer recognizes that he must organize the industry along educational lines. It was the intelligent manufacturer who started the trade practice conference idea. It is a pleasure to me to know that the contractors are going to have a trade practice conference. It will put these industries on a sound, organized basis where merchandising and credit will mean something.

"A discussion of credit today has little basis of reality. We need a national program and a national credit policy. These problems are national problems, not local problems, and I think we are going to be on the wrong track as long as we think of them as local instead of national.

"We are going to continue the basic services of the bureau: bookkeeping, apprenticeship and sales promotion. But we are not going to emphasize them to the degree they have been in the past. We want to continue to service those who have used our services in the past, but we want to concentrate our energies upon setting the stage for a proper industry background—in other words, policy determination.

"It does not do us any good to send bookkeeping systems around the country (and we do the immense amount of $50,000 a year in bookkeeping systems). But that is a drop in the bucket. We feel we can be of more benefit to the industry if we concern ourselves with the fundamental problems and act as a service organization for these others.

Changes in the Bulletin

"IT IS not our desire and never has been, to my knowledge, to make out of the bulletin a magazine which would carry advertising. I think our sincerity is indicated by what we are going to do. We are going to cut out all news. We are going to confine our bulletin to the actual a-b-c of sales procedure. The average contractor is not a blockhead as some would make him out. He is a human being like the rest of us. He has been brought up in a mechanical profession and has done jobs not allied with salesmanship at all. But there is a middle ground that, I think, we can serve and we can do it only by telling the contractor what to say.

"We are going to forget stimulation and inspiration and give him the information. We have hired a man who is a practical salesman and a good writer. We have hired a man who is calling on contractors to find out how they sell closet combinations, let us say. Then he checks up with the wholesaler to find out if that man is really selling closet combinations. Then he will go to the manufacturer and get all the information he needs. Then he may take his own medicine—go out and sell a closet combination for the contractor. He will not be permitted to put pen to paper until he has done that.

The bulletin from the March issue on will have nothing in it but hard-boiled sales information.

"For 1930 we have a $100,000 program. We are changing the by-laws to permit representation on the board of directors of all the elements in the industry to make it a constructive force in the industry."

The association officers who attended the conference are named in the following list furnished by the Plumbing and Heating Industries Bureau:

Anderson, L. V., Lake Forest, Ill.
Bachman, A., Cincinnati, Ohio.
Baker, H. C., Toledo, Ohio.
Bentley, Frank, Washington, D. C.
Bergner, Wm. G., Granite City, Ill.
Blatherwick, L. N., Chicago, Ill.
Branson, F. D., La Crosse, Wis.
Braun, L. T., Chicago, Ill.
Bohrer, C. A., Chicago, Ill.
Britton, L. W., Chicago, Ill.
Brownell, C. D., Champaign, Ill.
Byrd, E. G., New York City.
Burquest, W. H., Chicago, Ill.
Bolton, Clarence A., Chicago Heights, Ill.
Blake, E. G., St. Louis, Mo.
Chester, A. J., Evanston, Ill.
Clarke, J. L., Indianapolis, Ind.
Collins, Treve, New York City.
Cotton, R. M., Indianapolis, Ind.
Clucas, W. L., St. Louis, Mo.
Danielson, W. A., Palatine, Ill.
De Neille, J. L., Chicago, Ill.
De Rouville, J. M., Albany, N. Y.
Dietule, A. A., Sterling, Ill.
Donovan, J. F., Philadelphia, Pa.
Drake, Geo. H., Buffalo, N. Y.
Ebke, August, Buffalo, N. Y.
Ellen, Eb, Cleveland, Ohio.
Farrar, R. L., Nashville, Tenn.
Feeney, M. J., Philadelphia, Pa.
Finke, C. P., Sheboygan, Wis.
Fitts, J. C., New York City.
Fleishauer, Fred, Buffalo, N. Y.
Flentje, E. L., Chicago, Ill.
Gibson, W. C., Louisville, Ky.
Grabowsky, W. H., Canton, Ohio.
Gebhart, B. R., Chicago, Ill.
Hagen, Harry L., Evanston, Ill.
Halloran, George, Cincinnati, Ohio.
Hatzenbahler, F. J., Mt. Clemens, Mich.
Heinle, E. L., Cleveland, Ohio.
Hummelspach, J. T., St. Louis, Mo.
Hounold, F. C., Chicago, Ill.
Harroun, A. E., Minneapolis, Minn.
Journy, K. A., Rock Island, Ill.
Johnson, W. A., Kalamazoo, Mich.
Kanney, Edward, La Porte, Indiana.
Kerr, F. A., Washington, D. C.
Kinzey, B. Y., Cleveland, Ohio.
Klie, Walter, Cleveland, Ohio.
Lang, W. J., Chicago, Ill.
Land, S. L., New York City.
Lahr, Arthur, Lafayette, Ind.
May, L. M., Rockford, Ill.
Mason, C., Pontiac, Mich.
McAuliffe, Henry, East Chicago, Ind.
McFarland, G. R., Pontiac, Mich.
McKissach, J. A., Pittsburgh, Pa.
Merchant, V. M., Rockford, Ill.
Monteath, Edward, St. Louis, Mo.
Moran, J. H., Highland Park, Ill.
Munn, Peter M., Chicago, Ill.
Niebuhr, A. E., La Crosse, Wis.
Nilson, J. W., Rockford, Ill.
Pflug-Felder, R. H., Philadelphia, Pa.
Richmond, K. C., Chicago, Ill.
Ratz, Otto W., La Crosse, Wis.
Rhodes, J. F., Chester, Pa.
Richmond, G. B., Memphis, Tenn.
Schroeder, H. T., Barrington, Ill.
Sanderson, D. S., Drexel Hill, Pa.
Seeley, Glenn P., Pontiac, Mich.
Snyder, A. H., Detroit, Mich.
Strong, J. E., St. Louis, Mo.
Stuart, F. E., Detroit, Mich.
Smith, L. W., Jr., Minneapolis, Minn.
Taylor, Wm. E., New York City.
Ticknor, R. T., Champaign-Urbana, Ill.
Watson, G. T., Indianapolis, Ind.
Weber, R. J., Chicago, Ill.
Weiss, Adolph, Cleveland, Ohio.
Williams, L. R., St. Clair Shores, Mich.
Ysberg, H. E., Saginaw, Mich.

(To be concluded)

◆

The Lima, Ohio, Master Plumbers Association has elected the following officers for 1930: Charles Danner, president; O. B. Johns, vice president; and C. C. Cowles, secretary-treasurer.

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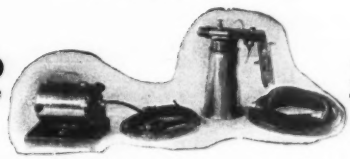
A Perfected Spraying Machine For The Plumber

39.50 Complete **39.50 Complete**



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PLUMBING and heating dealers, who once found little or no money in furnace coil business, are now getting real profits with the Globe Sizzler.

This furnace coil is a breadwinner for the dealer for several reasons. It usually costs less than "made-up" coils, yet customers recognize its superiority and willingly pay more for it. It saves time and labor, being adjustable to variable water openings and is easily and quickly installed in any furnace.

The Globe Sizzler is the only one piece coil made providing circulation always in a horizontal or an upward direction. It can contain no pockets to clog and lime up, and therefore assures free, noiseless flow of water, and it heats water *hot* in less time.

The Globe Sizzler is a patented one-piece coil, rapidly being adopted by plumbing and heating dealers throughout the country. It is stocked by all leading plumbing and heating wholesalers. Write us or ask your jobber for details on the Globe Plan for making your furnace-coil business show you bigger profits.

GLOBE MACHINERY & SUPPLY COMPANY

227 W. Court Ave. Des Moines, Iowa

The GLOBE Sizzler

THE NO-POCKET, ONE-PIECE FURNACE COIL

The Value of Associations

By W. L. CLUCAS

W. L. Clucas

SPEAKING before a recent meeting of master plumbers in southern Illinois, W. L. Clucas, past president of the St. Louis, Mo., association, stressed the present-day value of associations and the need for co-operation.

"We are living in an age of progress," said Mr. Clucas, in part. "Progress is the keynote of all business and to my mind no other trade has made such rapid progress as the plumbing industry. No one could succeed working alone. But our craft has organized, has come together, is exchanging ideas, is submitting business problems to discussion and in this manner progress and experience are being passed on to others.

"Never was there a time in the history of the world when organization stood for so much, for good or ill, as it does today. The whole commercial world is tending in the direction of organization and co-operation. We see many forms of organization, from associations to groups organized to buy on a large scale and to sell volume, as in the case of the chain stores.

"Competition in trade has everything figured down to a close margin. So organization and co-operation are required today because of keen competition. Now, I feel that, to be successful, organizations like individuals must be progressive. They must seek new ideas constantly. The activities of any association should be handled by its members as a trade or business proposition. There must be a planned program. There must be discussions with representatives of the other branches of the industry. Men should meet, not merely for social and fraternal features. They are all right in their place, but the association should always be doing and planning real constructive activities.

"I can state from experience and observation that all trade organizations constantly need new and constructive ideals of efficiency, and I believe that the plumbing industry is no exception. We are a great branch of the building industry.

"Loyalty and co-operation among trade membership means much. It should be just as strong as in fraternal associations. It eliminates many hard criticisms among the trade. From experience as a leader in association work I am very happy to note what a splendid spirit has been created among the membership by the individual interest and individual co-operation in each other's problems. This is much to be desired in all organizations.

"Any successful business man must acknowledge that a great amount of his success must be credited to the experience of others. There is opportunity at association meetings for members to discuss many problems as they find them in their business, which I have always found very profitable. When you have that type of meeting, you will find all the members present. It is a splendid method of building up a good organization."

In closing, Mr. Clucas touched on the necessity for advertising, and for service without which, he said, the best managed business will fail.

He remarked that advertising is one of the outstanding needs of all business. In speaking on service Mr. Clucas said that this is the most important part of the contractor's business and without it the best managed business will fail.

Group of delegates and visitors from St. Louis, Mo., at the Buffalo convention, N. A. M. P.

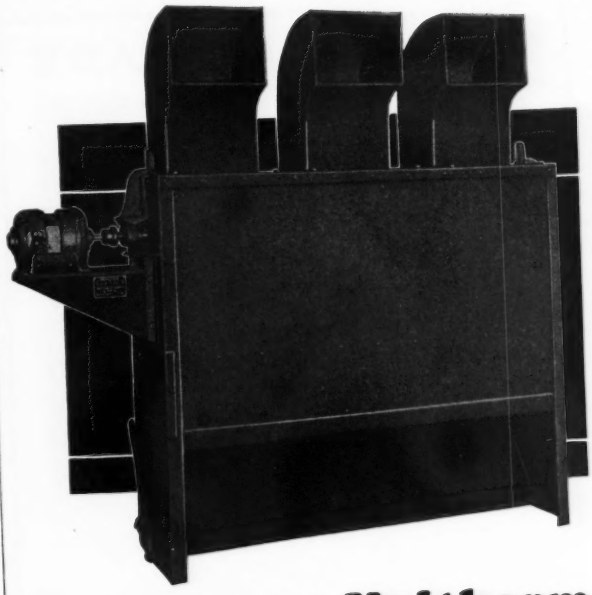
Federal Aid for Plumbing Schools

(Continued from Page 93)

public funds, parochial schools, sectarian schools of all kinds, and privately endowed colleges, whatever their educational standing, are barred from receiving Federal aid, even though some of their trustees may be elected

List of Schools and Classes Receiving Federal Aid for Courses in Plumbing

CITY	Evening	Part Time	All Day
Alabama:			
Birmingham—Phillips High School		x	
Mobile—Barton Academy	x		
California:			
Oakland	x	x	
Los Angeles—Frank Wiggins Trade School	x	x	
Pasadena—John Muir High School	x		
Sacramento—High School	x		
San Jose	x		x
Colorado:			
Denver—Opportunity School	x		
Delaware:			
Wilmington—Trade School	x		
Florida:			
Jacksonville (Theory and Practice)	x		
Pensacola—High School	x		
Tampa—Brewster Vocational School	x		
Illinois:			
Joliet—High School	x		x
Chicago—Two High Schools		x	
Indiana:			
Ft. Wayne—Central High School	x		
Hammond	x		
Indianapolis—Arsenal Tech			x
Kentucky:			
Louisville—Trade School		x	x
Louisiana:			
New Orleans—Delgado Central Trade School	x	x	x
Maryland:			
Baltimore—Vocational School	x		x
Massachusetts:			
Beverly—Evening Industrial School	x		
Boston—Trade School	x		
Fall River—Evening Ind. Sch. and Trade Sch	x		
Haverhill—Evening Ind. School	x		x
Lawrence—Evening Ind. School	x		
Lowell—Evening Ind. School	x		
New Bedford—Evening Ind. School	x		
Newton—Evening Ind. School	x		
Quincy—Evening Ind. School	x		x
Worcester—Boys' Trade School			x
Michigan:			
Saginaw—High School	x		
Missouri:			
Kansas City—Lathrop	x		
Nebraska:			
Lincoln—Whitter	x		
New Jersey:			
Atlantic City—Evening Vocational	x		x
Bayonne—Evening Vocational	x		
Newark—Technical	x		
Passaic—Evening Vocational	x		
Paterson—Vocational	x		x
Union City—Union Hill High School	x		
Essex County Boys' Vocational	x		
New Brunswick	x		
Plainfield	x		
Montclair		x	



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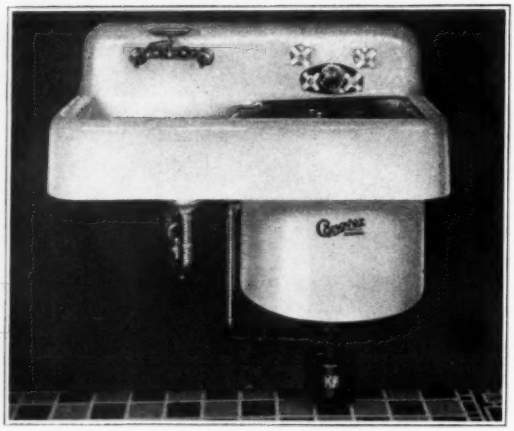

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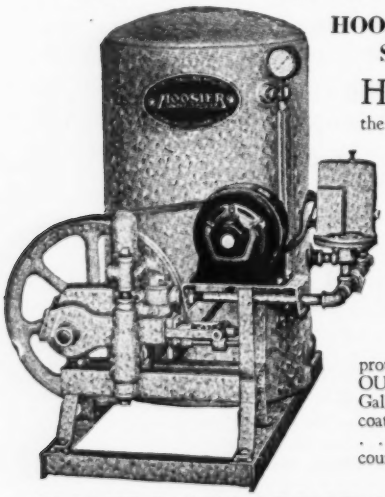

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List of Schools and Classes Receiving Federal Aid for Courses in Plumbing

CITY	Evening	Part Time	All Day
New York:			
Buffalo—McKinley			x
New York City—Boys' Vocational			x
New York City—Murray Hill			x
Yonkers—Saunders Trade			x
North Carolina:			
Greensboro—McIver School	x		x
North Dakota:			
Wahpeton—State School of Science		x	
Ohio:			
Akron—Hower School	x		
Cincinnati	x	x	
Cleveland—Trade	x	x	
Dayton	x	x	
Alliance—North Park		x	
Canton		x	
Toledo—Woodward		x	x
Warren		x	
Youngstown		x	
Oregon:			
Portland		x	
Pennsylvania:			
Harrisburg—Central High	x		
Johnstown	x	x	x
Philadelphia—Central Evening	x		
Philadelphia—No. East Evening	x		
Philadelphia—So. Philadelphia Evening	x		
Philadelphia—Central High Annex	x		
Pittsburgh—Grant Vocational and Ralston	x	x	x
Reading—High School	x		
Scranton—Jefferson Evening	x		
Zerbe Township—High School		x	
Waynesboro—High School		x	
York—Wm. Penn High School		x	
Lewistown—High School		x	
Lock Haven—High School		x	
Altoona—High School			x
Erie—East High School			x
Rhode Island:			
Providence—Trade School	x		
Tennessee:			
Memphis—Crockett Tech.—(Plumbers' Drawing and Math.)	x	x	
Texas:			
Houston—Dow School	x		
Virginia:			
Norfolk—Maury High School	x		
Newport News—Apprentice School		x	
Washington:			
Seattle—Broadway	x		
Spokane—Lewis & Clark	x		
Wisconsin:			
Fond du Lac—Vocational School	x		
Green Bay—Vocational School	x		
La Crosse—Vocational School	x		
Oshkosh—Vocational School	x	x	
Racine—Vocational School	x	x	
Sheboygan—Vocational School	x		
Watertown—Vocational School	x	x	
Waukesha—Vocational School	x	x	
Superior—Vocational School	x		
Appleton—Vocational School		x	
Janesville—Vocational School		x	
Manitowoc—Vocational School		x	

by public ballot or be appointed by officials so elected."

About 100 plumbing trade schools and classes in this country are receiving the benefit that the government offers them, and these schools are named in the accompanying list:

A study of the country's list of schools and classes devoted to plumbing, which are receiving federal aid, shows several interesting things.

In the first place, we believe there is a considerable number of plumbing schools and classes in different parts of the country, which are probably entitled to this aid, which apparently are not receiving it. They should certainly put themselves in line to receive the benefit of Federal aid.

The largest number of these schools and classes give evening instruction only. Excepting for a few scattering instances, the part-time vocational educational plan is confined to Ohio, Pennsylvania and Wisconsin.

We do not quite understand why the part-time plan is not more in use in all of the industrial states, instead of in three only. We think the plan should become much more generally applied, and with that idea in mind, we contemplate another article devoted to consideration of this particular educational plan.

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Richmond Association to Hold Semi-monthly Luncheons

The Master Plumbers and Heating Association of Richmond, Va., on January 9 inaugurated twice-monthly luncheons for its members. The first luncheon, served at Haley's restaurant, that city, was attended by a good percentage of the membership. Association affairs as well as matters pertaining to business generally were discussed. The gatherings are scheduled for the first and third Thursdays of each month.

Associations Elect Officers

The Master Plumbers Association of Newark, N. J., has elected the following officers for the ensuing year: Herman E. Baumgartner, president; William J. Rau, first vice president; John Bederski, second vice president; W. Brand Smith, secretary; and James O. Lewis, treasurer.

The Progressive Association of East Side Master Plumbers of Cleveland, Ohio, has chosen as its officers for 1930, Mark Stomberg, president; H. E. Fagin, vice president; George Sullivan, secretary; and George J. Wehrle, treasurer.

The Society of Sanitary & Heating Engineers of Tulsa, Okla., has elected the following members to serve on the official staff for 1930: J. H. Carnahan, president; W. L. Mason, vice president; N. G. Watt, secretary; and V. D. Fowler, treasurer.

The Lynn Master Plumbers' Association of Lynn, Mass., has elected as its officers for the ensuing year the following members: Eugene H. Harnois, president; Roger Pofer, vice president; and F. K. Tobing, secretary-treasurer.

The Moline Master Plumbers Bureau of Moline, Ill., at its regular business meeting on Tuesday afternoon, January 7, re-elected the following officers for 1930: J. V. Lockhart, president; A. L. Hodgdon, vice president; and W. L. Stange, treasurer. Walter Forssman was reappointed to serve as secretary-manager.

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Woman's Page

Whatever increases the beauty or convenience of the home is of interest to women. In the kitchen, especially, where so many daily tasks are performed, convenience is of much importance. Realizing this fact, the Home and Community Department of the Ashland County Farm Bureau has held a number of kitchen improvement contests, in various counties in Ohio. These improvements include running water and modern plumbing in those farm homes which are without water supply systems. A sink of convenient size and height is an improvement for many a kitchen which is already supplied with running water. Contests, such as these kitchen improvement contests, might be promoted in many communities by the women of the auxiliaries.

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Indianapolis Auxiliary Has Busy Year

The incoming year brought to a close a very busy year for the Indianapolis Women's Auxiliary, and also started another year's activities. Meetings have been held each month, and these meetings have all been well attended. A Dutch lunch and card party are held once each month, at which time the husbands of the auxiliary are entertained. The December meeting was a very busy one, as the election of officers took place then, and arrangements were made for a children's Christmas party, which was held at the home of Mr. and Mrs. G. Sellmeyer, 3641 Guilford avenue. Sixty grown people and children were present at the party. Santa Claus, of course was there also, and gave a gift, fruit and candies to each child. Santa also made a very appropriate presentation to the treasurer, Mrs. James Kreglo, and her husband, in recognition of their silver wedding anniversary. A donation was made to the local welfare society for their Christmas relief fund. The officers elected for the ensuing year are: President, Mrs. G. Thomas Watson; vice president, Mrs. H. Bauer; secretary, Mrs. Charles Trosky, and treasurer, Mrs. James Kreglo.

St. Louis Auxiliary Gives to Christmas Charity

The members of the St. Louis Women's Auxiliary enjoyed a delightful luncheon and card party at the Town Club, in November. On December 12, the regular monthly meeting was held at the Statler Hotel, with Mrs. William Kuehne presiding. A committee composed of Mrs. J. Els, Mrs. E. E. Manahan and Mrs. F. Kuhns was appointed to distribute Christmas charity. The members of the committee selected four day nurseries which take care of needy children and one widow with five children, as the recipients of this charity. All of these were well taken care of by this committee. At this meeting the annual election of officers was held and resulted as follows: Mrs. H. Bartosch, president; Mrs. A. Marx, vice president; Mrs. R. B. Roos, secretary; Mrs. J. Els, treasurer; Mrs. J. Fowler, sergeant-at-arms. These officers were installed

Miss Alma Niesen, of Cincinnati, president of the Women's Auxiliary to the Ohio Master Plumbers' Association, has been associated in business for a number of years with her father, who has been established in one location for forty-four years. She is a charter member of the Cincinnati Ladies' Auxiliary and has held offices in this organization from the first until last year. She served as secretary five years, and as president for three years. Under Mrs. James Gibson's administration she was state secretary, later was vice president and now is president of the state organization.

When Mrs. Hornbrook was president of the Women's Auxiliary to the National Association of Master Plumbers, she served as director, and is now serving on the Opportunity Committee.

Outside of her work as secretary and treasurer of her father's business and officer of the various organizations, she is a member of the Cincinnati Grand Opera Guild and of a church choir, and has taken the leading role in several operas staged by this guild at the Woman's City Club's auditorium.

at the meeting at the Statler Hotel on January 9, for which occasion a luncheon and card party was arranged by the entertainment committee.

New Jersey State Auxiliary to Hold Board Meeting

The Women's Auxiliary of the New Jersey State Association of Master Plumbers has arranged its next quarterly board meeting for February 3 in the association rooms of the Orange, N. J., Master Plumbers' Association. Following the meeting, which is scheduled for 2:30 in the afternoon, the members and their guests will go to Walnut Hall in East Orange for dinner. The wives and daughters of master plumbers throughout the state are invited to attend.

South Shore League Gives New Year's Dance

A New Year's Eve dinner dance was held at the Hotel Racine, Racine, Wis., by the Master Plumbers of the South Shore League. Dancing was enjoyed throughout the evening, while Fred Heiss provided the entertainment. Dinner was served at midnight and the happy crowd was seated at a table attractively arranged with noisemakers and favors. "Domestic Engineering" balloons were everywhere and added much to the enjoyment of the party. Those in attendance were Messrs. and Mesdames Wallace and John Neary of South Milwaukee, John Fiener, Albert Brunk, Fred Heiss, Ed Kennedy, Frank DeLonge, L. C. Pugh, William Liegler, Charles Rasmussen, Fred Jena, Henry Gloede; Mrs. William Fall and W. R. Pugh of Racine.

Detroit Auxiliary Presents President with Flowers

The Women's Auxiliary of Detroit, Mich., held its first business meting of 1930 on Tuesday, January 7. Although the weather was very disagreeable, a good number were present, and a large amount of work was accomplished. A card party for members and friends was planned for the 21st. A dancing party in February will probably take the form of a valentine party. Mrs. Maggie Mesnard, president of the Michigan state auxiliary, attended, and after the meeting in a very pretty speech presented Mrs. Hazel Nawrot, president of the Detroit auxiliary, with a beautiful basket of everlasting flowers on behalf of the members. The presentation was in consideration of Mrs. Nawrot's taking the chair for another year, and to show the members' appreciation of her work and kindness shown to them by her during the past year of her office.

San Francisco Auxiliary Seats New Officers

A red letter day on the calendar of the San Francisco, Calif., auxiliary is the first meeting of the new year when the incoming officers are installed. This year the event took place at Master Plumbers' Hall on January 2, when Mrs. Roy Murray wielded the gavel for the first time and Mrs. William Koenig assumed the vice presidency. Mrs. Joseph C. Sands was reelected financial secretary, and Mrs. L. Ravani was again selected to act as sergeant-at-arms. The retiring president and vice president were, respectively, Mrs. Albert G. Trezise and Mrs. George Y. Morton.

Among other brief, informal talks was that of Mrs. Koenig, who spoke of last year's achievements, based on the successful and harmonious conduct of the auxiliary's affairs, pledging herself to carry on such a policy during the coming year.

A delicious luncheon preceded the installation ceremonies. Due to the success of the plan during the past year, it was decided to hold many of the 1930 meetings

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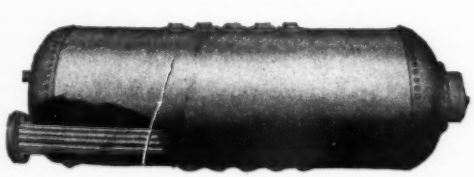

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Detroit, Mich., 1728 Ford Bldg.
Houston, Tex., 1308 Sec. Nat. Bank Bldg.
Los Angeles, Cal., 517 Hollingsworth Bldg.
Minneapolis, Minn., 716 Build. Exch.
Montreal, Que., Can., Cement Bldg.
New York, N. Y., 271 Madison Ave.
Philadelphia, Pa., 1500 Walnut St.
Pittsburgh, Pa., Union Trust Bldg.
Portland, Ore., 1000 Buyers Bldg.
Salt Lake City, Utah, Kearns Bldg.
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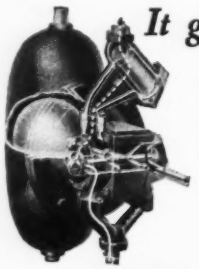

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Canton Auxiliary Elects Delegates to Convention

The Woman's Auxiliary to the Canton (Ohio) Master Plumbers' Association was entertained by Mrs. Herman Grabowsky at her home, 3300 Sixth street, southwest, Tuesday afternoon, January 7. She was assisted by Mrs. Walter Zernechel. At the business meeting, Mrs. A. W. Baum was elected delegate to the state convention which will be held in Springfield, February 4. Mrs. Clarence Baechel was elected alternate. Mrs. C. G. Hahn, president of the auxiliary, will also attend the convention. Following the business meeting, five hundred was played and honors went to Mrs. William Zernechel and Mrs. Carl Sponseller. The next meeting will be held Tuesday afternoon, February 11, when Mrs. William Zernechel and Mrs. C. G. Hahn will be the hostesses.

Dayton Auxiliary Gives Christmas Luncheon

On December 19, the Ladies' Auxiliary to the Dayton, Ohio, Master Plumbers' Association attended a Christmas luncheon at the Shrine club. A beautiful shower of red roses in the center, smaller bouquets of holly at either end and candy favors representing baskets of flowers effectively decorated the table in true Christmas style. Inasmuch as this date was also the date for the regular meeting, the president called to order a short business session. After the meeting, the remainder of the afternoon was spent playing cards.

Philadelphia Auxiliary Plans Banquet

The Women's Auxiliary of the Master Plumbers' Association of Philadelphia, Pa., has planned a banquet for February 3 at McCallister's Auditorium in that city. Mrs. James Rooney is chairman in charge of arrangements and is being assisted by Mrs. Myrtle Stratton, secretary; Miss Violet Jakoby, Mrs. M. Moran and Mrs. J. Seibel.

La Crosse Woman's Auxiliary Elects Officers

Mrs. Michael Hoffman was re-elected president of the Woman's Auxiliary of the La Crosse, Wis., Master Plumbers' Association at the annual Christmas dinner party which took place at the I. O. O. F. hall. Other officers chosen include: Mrs. Frank Branson, vice-president; Mrs. Otto Marquardt, secretary; Mrs. Henry Niebuhr, treasurer; Mrs. George Keinholz, chaplain; and Mrs. William Woehlke, sergeant-at-arms.

Orange Women's Auxiliary Installs Officers

Officers for 1930 were installed at the January meeting of the Women's Auxiliary to the Master Plumbers' Association of Orange, N. J., as follows: President, Mrs. F. Hoffman; vice president, Mrs. O. Miller; treasurer, Mrs. G. Brenner; secretary, Mrs. T. Berg; corresponding secretary, Mrs. L. H. Williams; sergeant-at-arms, Miss Tillie Berg. The trustees are: Mrs. W. Brown, Mrs. H. Krauss, Mrs. C. Kunz and Mrs. A. Trapper. The master plumbers were the guests of the auxiliary that night. Refreshments were served. Another interesting affair was a Christmas party at Walnut Hall, Main and Walnut streets, East Orange. There were 113 present. Santa Claus was present and gave each member a gift, and there was also a Christmas tree. Several special prizes were won by different members. Refreshments were served at midnight, and dancing was indulged in until the wee hours of the morning.

Mrs. Charles Kunz was chairman of the committee, other members being Mrs. Harry Krauss, Mrs. Mortimer

McChesney and Mrs. Leslie H. Williams. The Orange auxiliary expects to entertain the state board next month, and all the members are looking forward with pleasure to this occasion.

Lancaster Auxiliary Gives Christmas Party

The Ladies' Auxiliary of Lancaster, Pa., held its regular monthly meeting, Tuesday, December 17, in the rooms of the master plumbers' home. After the regular business session, a Christmas party was held. Mrs. Peter Rietschey, president of the Auxiliary, presided over the party, and saw to it that everyone had a good time. Santa Claus was present and gave a gift to each lady. The tables were decorated in the holiday colors, lending a festive appearance to the occasion. Various interesting games were played. Nearly all the members were present, and all voted the party a big success. At a recent neeting, the members of the Lancaster auxiliary showed their appreciation of the work of their officers by re-electing all for the coming year. These officers, who so successfully carried on the work last year, are as follows: President, Mrs. Peter Rietschey; vice president, Mrs. C. M. Buckwalter; treasurer, Mrs. William Brinkie; secretary, Mrs. Edward Stumpf.

Oakland County Auxiliary Gives Party

The Oakland County (Mich.) Women's Auxiliary gave a Christmas party to make up a basket, and every one present had a most enjoyable time. Luncheon was served and members exchanged gifts. The January meeting of the auxiliary has been postponed, and the date will be announced later.

Santa Monica Auxiliary Elects Officers

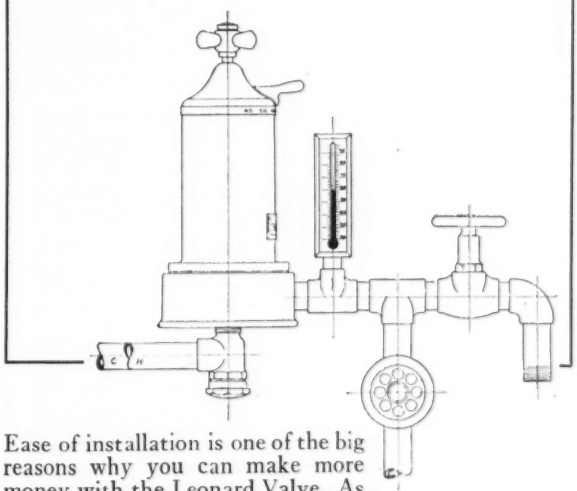
The Santa Monica Bay, California, Ladies' Auxiliary held an election of officers at the last meeting of the year on December 19, 1929. The officers for 1929 have retained their positions for 1930. President, Mrs. E. J. Starring; vice president, Mrs. S. D. Falconer; treasurer, Mrs. H. Matheson; secretary, Mrs. E. R. Keller. Mrs. E. J. Starring served refreshments after the business meeting. On December 20, a Christmas party was held which was enjoyed by young and old. Mrs. Tyler and a few children entertained with a playlet entitled "Waiting for Santa Claus." Old St. Nick presented each child with a toy and a stocking filled with candy and nuts. Several children gave dance numbers, recitations and songs. The music was furnished by a Hawaiian trio. Ice cream, cake and coffee were served to all in attendance. Mrs. Duron was hostess for the first meeting of 1930, which was held on January 2.

Social to Be Held for New Members by New London Auxiliary

We learn from Mrs. R. J. Kennedy of the New London, Connecticut, Woman's auxiliary that at its last meeting it was voted upon to hold a social for new members. Plans were also made to have a dinner for them. The auxiliary holds dinner-dances about every three months, with the master plumbers in attendance, of course, as the purpose of these dinners is to establish a friendlier feeling among them. The expense of these dinners is taken care of by the auxiliary's treasury. The auxiliary is proud to state that in spite of the fact that it is a small organization, New London's poor people are very grateful to them for the baskets of food which were distributed at Thanksgiving.

In addition to these many activities, the auxiliary holds food sales and parties during the year which help to increase the sum in their treasury.

LEONARD
Thermostatic Water Mixing Valve



Ease of installation is one of the big reasons why you can make more money with the Leonard Valve. As to the service this valve gives—years of proof on every type of job is the best witness of its superiority.

Write for further particulars.

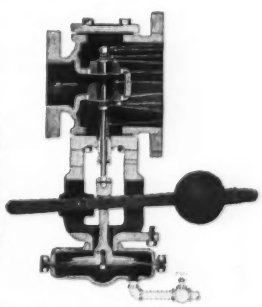
LEONARD-ROOKE CO., Providence, R. I.

QUALITY SIMPLICITY

KIELEY
REGISTERED TRADE MARK

Efficiency
always
OUT-EARNS
its cost

Because Kieley Steam, Water, Air, Gas and Oil Specialties are efficient . . because they eliminate leakage . . . are easily accessible . . . because they hold records for endurance and dependability, there is no doubt in the fact that they soon *out-earn their costs.*

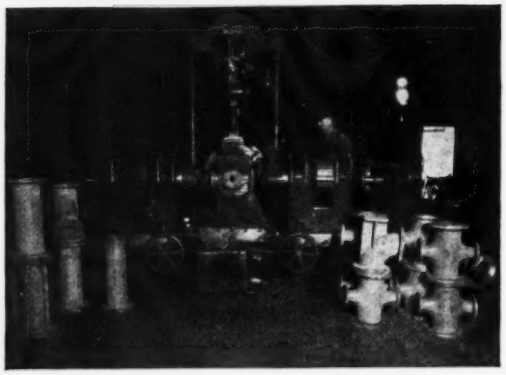


Every Kieley & Mueller product has been developed slowly and can be depended on to be absolutely safe for the service intended.

Write for catalog No. 57. It contains 250 pages of valuable information on Pressure Control and Regulation. No obligations.

KIELEY & MUELLER, Inc.
Established 1879
34 WEST 13TH ST. NEW YORK CITY
STEAM, WATER, AIR SPECIALTIES

L.F.C. HIGHEST QUALITY



PROMPT SERVICE L.F.C.

Facing three outlets with one operation.

ENORMOUS PRODUCTION FACILITIES

—a part of Lynchburg Service

NO ORDER for Cast Iron Pipe or Fittings—whether standard or special—is ever held up at the Lynchburg Plants for lack of production facilities . . . Our big equipment, modern methods and skilled labor insures the contractor or engineer "A finished on time job" . . . Those who know are "Keen" about "Lynchburg Service."

Bell and Spigot Pipe and Fittings from 4" to 48"

Flanged Pipe and Fittings 3" to 84"

LYNCHBURG FOUNDRY COMPANY

General Office, LYNCHBURG, VA.

Peoples Gas Bldg. CHICAGO, ILL.

342 Madison Ave. NEW YORK, N. Y.

Business Changes

Cartersville, Ga.—The Hendricks Plumbing Co. has completed plans for opening a down-town showroom in one of the stores in the rear of the Bartow hotel. J. B. Hendricks is head of the company.

Bridgeport, Conn.—S. Vall, heating and piping contractor, has equipped a new business and shop establishment at 683 Madison avenue, and moved from his former quarters at 17 Fairfield avenue.

Atlanta, Ga.—The Farrell Plumbing & Heating Co., of which Dan Farrell is president, has awarded the contract for the construction of changes and additions to the company's present sales and store building.

Boston, Mass.—The H. E. Witten Co., heating contractors, has taken J. O. James, an employe of the company for a great many years, into the firm as a partner.

New Business Ventures

New Haven, Conn.—The Nokol Utilities, Inc., has been incorporated with a capital of $15,000 to deal in oil burning equipment. The incorporators are Charles A. Dandee, Evelyn M. Wathers and Elizabeth Imrie, all of Bridgeport, Conn.

Hartford, Conn.—M. Robin & Sons, Inc., has been organized and incorporated with a capitalization of $50,000, to engage in the heating contracting business, by Samuel Robin, Raymond Robin and Ida Robin.

Hartford, Conn.—W. B. Carson, Inc., 224 Sargent street, has been chartered with a capital of $100,000 to conduct a heating contracting business. The incorporators are: W. B. Carson, F. L. Hausser, Jr., and Premo Viti.

Bound Brook, N. J.—The firm of S. Gillespie and Son has been organized and incorporated, with a capital of $20,000, to establish and operate a local plumbing contracting and engineering business. S. Gillespie is president.

Racine, Wis.—The Thomas Heating Co. has filed articles of incorporation, listing its capitalization at 250 shares at $100 each. The incorporators include: Norman A. Thomas, Peter J. Menden and Wilbert Gregory. The firm installs heating, ventilating and refrigeration systems.

Belleville, Ill.—The Hirth Plumbing and Heating Co.,

Seated: C. Wittichen, guest, and J. S. Kennedy, II, National Tube Co., Atlanta. Standing: Hayden Myer, Pacific Boiler Corp.; W. H. Hildebrant, manufacturers' representative; William Gathan, Standard Sanitary Mfg. Co.; F. W. McMiller, Young & Vann Supply Co.; William Tehan, Crane Co., Birmingham; William M. H. Grace, Sloan Valve Co. Photo taken at the convention of the Alabama State Association of Master Plumbers

210 North Illinois street, has been incorporated with a capitalization of $20,000, by George Hirth, Lillian Hirth and Mamie Hirth, to engage in the plumbing and heating contracting business. Turner & Holder, Advocate building, Belleville, represent the company.

Newark, N. J.—Plumbing and Radiation Sales, Inc., has been chartered, with a capital of $50,000, to establish and operate a plumbing and heating contracting business. Herman B. J. Weckstein, local attorney, represents the new concern.

Chicago, Ill.—The Buena Plumbing and Heating Co., 3840 North Ashland avenue, has been incorporated with a capitalization of $50,000 by Otto G. Kasnick, Clifton T. Hastedt and Myrtle E. McEnery, to engage in the plumbing and heating business.

Lockport, N. Y.—C. C. Carpenter and associates have organized and incorporated the Carpenter Plumbing and Heating Co., with a capital of $20,000, to establish and operate a plumbing and heating contracting business. H. V. Bradley, local attorney, represents the new concern.

Rochester, N. Y.—The Atlantic Equipment Co. has been organized and incorporated, with a capital of $10,000, to establish and operate a plumbing and heating contracting business. Among the principals of the new concern are Barron B. Greenberg and D. Mordecai Greenberg. Headquarters have been established at 1124 Garson avenue.

Brooklyn, N. Y.—The Prospect Ventilating Works has been organized and incorporated, with a capital of $20,000, to establish a ventilating engineering and service business. M. N. Ginsburg, 5 Beekman street, New York City, represents the new firm.

Sherbrooke, Que.—Joseph M. Deschenes, Joseph Labrecque, Alfred Deschenes and Joseph Deschenes, Jr., have incorporated under provincial charter, under the firm name of Deschenes, Ltd., with a capitalization of $20,000. The company will operate a plumbing and heating contracting business.

Milwaukee, Wis.—The Ideal Heating Co. has been organized with a capital of $5,000, to engage in the heating contracting business.

Spokane, Wash.—The Stimson Heating Co. has engaged in business at South 159 Lincoln street, under the management of William Stimson, Jr.

Des Moines, Ia.—C. W. Rosene, for over 35 years president of the Des Moines Plumbing and Heating Co., 809 Grand avenue, has engaged in the plumbing and heating contracting business at 1112 Grand avenue, under the firm name of Rosene, Plumbing & Heating Contractor.

Cleveland, Ohio—William H. Buy and associates, have organized and incorporated the William H. Buy Plumbing Co., with a nominal capital of 250 shares of no par value. It is planned to establish and operate a plumbing and heating contracting business. Jag G. Short, Commercial Bank building, represents the new firm.

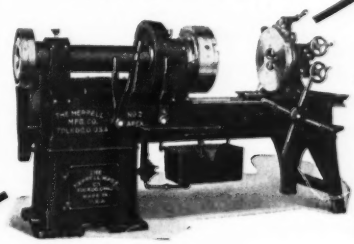
New York, N. Y.—John J. Gleason, Inc., has been organized, with a capital of $1,500, by John J. Gleason and associates, to establish and operate a plumbing and heating contracting business. A. W. Birkin, 271 West One Hundred Twenty-fifth street, represents the new company.

Lakewood, N. Y.—F. W. Egan, 22 Terrace avenue, has established the Lakewood Hardware, Paint and Plumbing Co. and will engage in the plumbing contracting and engineering business.

New York, N. Y.—Jaros & Baum, consulting engineers, have moved their offices to the 23rd floor at 1350 Broadway, in that city.

WHEN THE BIDDING IS CLOSE—

SMILE!



No. 3 APEX LATHE TYPE MACHINE 1"to 6" pipe

Merrell Apex users smile no matter how close prices are for they possess a machine especially built to enable them to meet competition. More speed, ample power, eight speed changes with friction clutch control, but two die changes. Die change made in thirty seconds without loosening screws or plates. Double cut off knives make ours the fastest cut off built. New "Merrelap" process insures unusual accuracy and long life in our dies. Write for additional information.

MERRELL

PIPE THREADING for BETTER threads MACHINES

841 Curtis St. - Toledo, O.

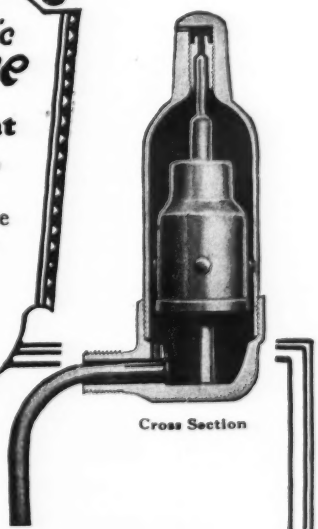
THE "Air-Out" Syphon Thermostatic Air Valve

A Large Float

Heavy Cast Brass Base

Free sample valve for testing for the asking

All metal, non-adjustable



Cross Section

The Last Word~ In Syphon Air Valves

Guaranteed Five Years

NEW YORK AIR VALVE CORP.

478 Broome St. · 44 Wooster St.

New York, N. Y.

New Trade Literature

Leaflet of J. H. Williams & Co.

J. H. Williams & Co., of Buffalo, N. Y., are sending out a leaflet describing their new chain pipe tongs for both pipe and fittings. These chain tongs have reversible pipe and fittings jaws. Illustrations show the tongs with cable chain and with flat chain. The "V" recess in the jaws is also illustrated.

Circular of T. A. Ridder Co., Inc.

T. A. Ridder Co., Inc., of Boston, is distributing a circular showing its new radiator bracket. This bracket, which is adjustable for height by means of a slotted bolt hole and grooved washer, is illustrated in the folder. The method of making other adjustments is described, and also the main points of construction.

Circulars of American Automatic Valve Corp.

American Automatic Valve Corp., of Chicago, is sending out a folder describing automatic float valves with level control attachment, and automatic piston type pressure regulators. Cross section diagrams show the float valve parts, and regulating valve parts. Flanged globe regulators, screw globes, flanged globes, etc., are illustrated.

Circular of Chicago Pump Co.

Chicago Pump Co., of Chicago, is distributing a circular describing its line of sewage ejectors. Three types of ejectors are described, and a number of illustrations are given. Tables of capacities and horse power are also given.

Catalog of Plumbers' Specialties

National Distributing Co., of New York City, has just issued its catalog of plumbers' brass, steam and rubber specialties. The catalog consists of seventy-two pages, with numerous illustrations. It lists steam and air valves, gas fittings, unions, fuller balls and washers, soap dishes, combination sink faucets, basin cocks, sink plugs, toilet seats, etc.

Bulletin of Neemes Foundry, Inc.

Neemes Foundry, Inc., of Troy, N. Y., has just issued its Bulletin No. 109. The bulletin describes and illustrates the concern's shaking grates and dumping grates for burning all sizes of anthracite and bituminous coals, as well as various other fuels. It also shows the assembly and parts of recently developed structural features, and the adaptability to various types of heating and power boilers.

Folder of the Foxboro Co.

The Foxboro Co., of Foxboro, Mass., is sending out a circular announcing its new steam flow meter. The circular contains a large illustration of this mechanical meter.

Calendar of Burnham Boiler Corp.

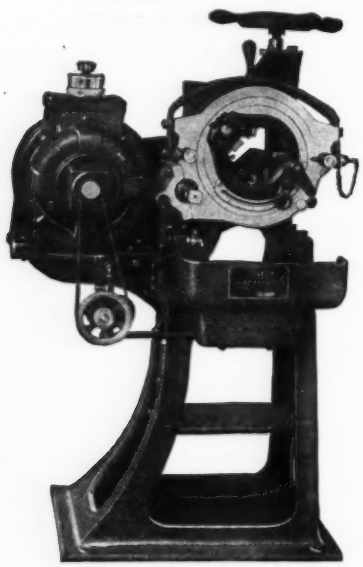
Burnham Boiler Corp., of Irvington, N. Y., is distributing a calendar, 21 by 32 inches. A large sheet is given for each month, and the previous and following month are shown. The top portion is illustrated in colors.

Folder of EverHot Heater Co.

EverHot Heater Co., of Detroit, Mich., is sending out a circular describing its automatic water heater with steel clad copper boiler. Illustrations of several sizes are given.

Circular of Hercules Chemical Co.

Hercules Chemical Co., Inc., of New York City, is sending out a circular featuring its pipe joint compound and plumber's soil. A drain pipe cleaner, tile and porcelain cleaner, boiler liquid for stopping leaks and removing scale from boilers, and a compound for stopping leaks in radiators are also described.



3 Inch Portable

Full Line HAND—BELT—ELECTRIC
Models ¼-2; ½-3; 1-4; 1-6; 1-8; 2½-12; 8-16 inches

Curtis

PIPE THREADING MACHINE

No lost time—no lost power—no poor jobs. Those are the money making factors that you should take advantage of by buying a Curtis Pipe Threading Machine for your shop.

It takes up a minimum of floor space and because of the fact that dies turn instead of pipe, uses very little power in comparison.

Easily threads bends.

THE CURTIS & CURTIS CO.
Main Office and Factory: 318 Garden St.
Bridgeport, Conn.

Pipelines Connected by L Y T

IF

If you can hold your stocks when all about you
Are selling theirs at any price they'll bring.
If you can hold your tongue when all men doubt you
And rumor mongers start to have their fling.
If you can hold your customers when losing
As well as when the market's on the wing,
You'll be the man of Rudyard Kipling's choosing
And you'll be a better man than Gunga Din.

"SALES TALKS."

While we're on the subject of the market, here are some of the things which Neal O'Hara, New York columnist, says affect the quotations:

"International Harvester fell off six points on the rumor that Ganna Walska was shopping for another private opera house in Paris. . . . Babe Ruth went on a diet this morning and Armour & Co. preferred sank 4½ points. . . . . Wrigley common fell off 5½ points on the rumor that Will Rogers will take a three months' vacation. . . . Standard Oil was off 3 points on the rumor that John D. had given away six more dimes. . . . Failure of the 1929 crop of cigarette lighters caused Diamond Match to go up 13 points. . . . Gotham Silk Hosiery gained 6½ points when Judge Landis predicted more runs than ever this season. . . . The rumor that the Smith Brothers would appear clean shaven on the cough drop boxes next fall reacted on Gillette Safety Razor for a substantial gain. . . . Statistics that 2,000,000 margin buyers had lost their shirts sent Cluett Peabody climbing to 78. . . ."

ANOTHER RISE

Sing a song of sixpence,
Pocket full of cash,
Four and twenty raisins
Slipped into a mash.
When the brew fermented,
It all blew up, I think—
Now wasn't that an awful thing
To happen in the sink!

TEXAS RANGER.

A PENNY SAVED, ETC.

A Scotchman found it necessary to notify his wife that he might be home late this evening, in which case he would phone her. This is what he told her:

"I'll ring ye at 6 o'clock. When ye hear the bell, ye'll know it's me. Dinna answer it, and I'll get ma nickel back."

BOOKANWRAP.

TRUE LOVE

She: "Darling, do you love me?"

He: "I'd swim the deepest sea, climb the highest mountain, and walk through a wall of fire for you. By the way, I'll be over tonight, if it doesn't rain."

BLAKE BULLETS.

"SY" SEZ

What the American people need is more stewed prunes and less applesauce.

Parson: "Which of the parables do you like best, my boy?"
Tommie: "The one where somebody loafs and fishes."

If you deny yourself a car, you can save enough money to pay your hospital bill when one whams you.

These red golf balls are bound to be a failure. What player ever would be able to find his ball after missing a two-foot putt?

"SY" MARTIN, Owensboro, Ky.

Man wants but little here below—zero.

L Y T.

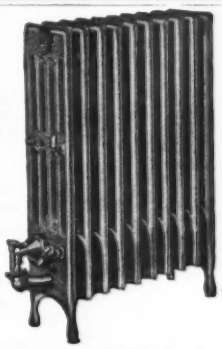
Gerstein & Cooper

That's the name to look for when you want boilers that have been proven under real installation conditions.

Order through your jobber or write us direct for full information.

GERSTEIN & COOPER CO.
1 W. Third Street, So. Boston, Mass.
New York Office: 166 W. 72nd St., N. Y. C.
Canadian Agents:
G. Mason Price, 832 St. James St., Montreal, Quebec, Canada

Instant Profit



"I wish we had some means for heating in emergencies that would not necessitate a trip to the basement in the cold hours of the night."

That is a remark you'll hear from your customers often. Why not supply that demand with Automatic Gas Steam Radiators?

There's instant and lasting profit in them. Ask your jobber.

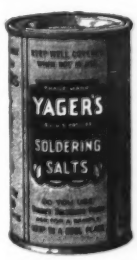
TESTING LABORATORY A.G.A. APPROVED

Automatic Gas-Steam Radiator Co. Pittsburgh, Pa.

for Highest Grade
BRASS & IRON GOODS
Say HAYDENVILLE
to your jobber
THE HAYDENVILLE CO., HAYDENVILLE, MASS.

For Better Work

No matter what the lead job, Yager's Soldering Salts will make it better. Order a trial tin from Dept. "D". Write today.



ALEX R. BENSON CO., Inc., Hudson, New York
For list of distributors see 1930 McRae Blue Book
Sales Agency for Canada: Canadian General Electric Co., Ltd., Toronto and Montreal

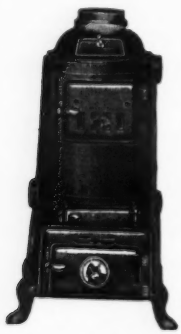
Hinges of the Better Kind

Hinge No. 100—Close-Ruf

GRAND HAVEN BRASS FOUNDRY
Grand Haven, Michigan
Hinges for all types of toilet seats
All hinges can be furnished Crodon Plated if so desired.

If you haven't full information on

KING TANK HEATERS



Write us for it today!

Oakland Foundry Co., Dept. DE, Belleville, Ill.

Bath a Day Movement

In one hundred and seventy-one cities and towns in the United States the booklet, "The Story of the Bath," has been placed in the schools, either by live associations, or by alert individual master plumbers. In those cities it is difficult to say how many people have been influenced by the educational material included in the booklet. We know that not only the pupils, but their parents, read it; and teachers have expressed themselves most enthusiastically about its value.

171

As the modern school room work is conducted, such a booklet as "The Story of the Bath" offers the teacher a splendid opportunity to organize a project which will keep the children busy in an educational way for weeks. It offers the master plumber and his association a splendid opportunity for newspaper publicity.

If you have never read "The Story of the Bath," we suggest that you write us for a complimentary copy. You will find it fascinating reading, and you will see just how it can be made to fit into your own or your association's promotional efforts.

Epigrams—For Your Use

The evil men do is soon forgotten—by themselves.

* * *

Add at least 50 per cent to the good one woman says of another.

* * *

What some men need is a rubber halo that will fit the morning after the night before.

* * *

Only after her beauty is gone does the vain woman discover that brains are useful.

* * *

Mother Eve may have invented temptation, but men have monopolized it ever since.

* * *

Some engagements end happily, but the majority end in marriage.

* * *

Why does patience always choose a monument to 'roost on?

* * *

There is something wrong with the man who does not secretly love praise.

* * *

Office seeking grows on a man like any other habit.

* * *

A good wife maketh a good husband; the bad ones are self-made.

* * *

A woman has no use for a miserly man, yet she always likes one close.

* * *

The lazier a man is the more he is going to do tomorrow.

* * *

Jokes on marriage are funny only to those who are not married.

* * *

Sometimes a youngster can be switched onto the right track.

* * *

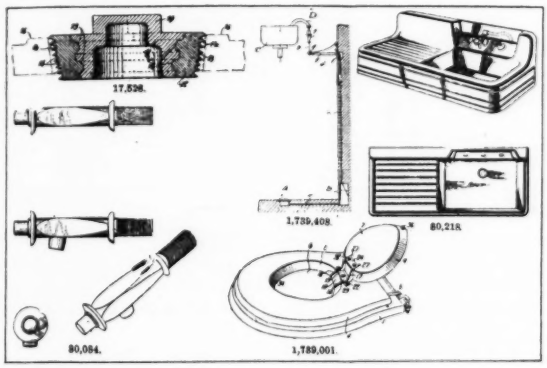
A wise man takes no chances on chance acquaintances.

PATENTS

Plumbing Department

17,528. Clean-out Plug. Frederick J. Mersfelder and Paul Balze, Leonia, N. J., assignors to M. & B. Manufacturing Co., Inc., Leonia, N. J., a Corporation of New Jersey.

80,084. Faucet. Everett L. Moore, Los Angeles, Calif.



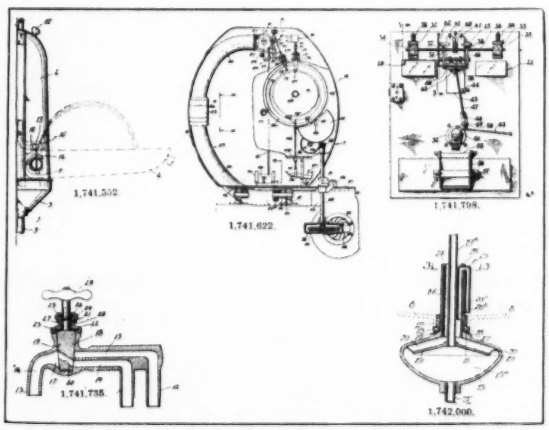
1,739,001. Toilet Seat. David E. Justus, Kansas City, Mo.

80,218. Sink. Charles R. Crane, 2d, and Roy H. Zinkil, Chicago, Ill., assignors to Crane Co., Chicago, Ill., a Corporation of Illinois.

1,739,408. Device for Flushing Water-Closet Pans. Aurelio Marques Medrano and Gabriel Chiossone, Buenos Aires, Argentina.

1,741,735. Valve. Joseph Blair Powers, New Castle, Ohio.

1,741,798. Sanitary Toilet-Seat-Cover Dispenser. Philip Sundock, Brooklyn, N. Y., assignor, by mesne assignments, to Louis Gordon, Brooklyn, N. Y.



1,742,000. Water-Heater Drain. James P. Morley, La Porte, Ind., assignor to Bastian-Morley Company, La Porte, Ind., a corporation of Indiana.

1,741,552. Drinking Fountain. Olaf Martinius Bohn, Mysen, Norway.

1,741,622. Sterilizer for Toilet Seats and the Like. Leon B. Grafani and Robert E. Peterson, Los Angeles, Calif., assignors, by mesne assignments, to American Automatic Sanitation Company, Wilmington, Del., a corporation of Delaware.

YOU can insure your jobs against foaming

FOAMING and Priming can now be absolutely prevented or stopped. A former evil can now be a real source of profit to you.

Science has produced a product that cannot fail—a product that definitely stops this trouble.

NO FOME

The product that ends boiler foaming and priming forever

When a boiler foams it is not your fault. It is caused by a chemical reaction in the water. This reaction cannot take place when No Fome is used—and it is cheaper to get this insurance than to spend time and labor in blowing off and flushing out boilers.

Heating contractors are using **NO FOME** in every new installation because:

1 No Fome does away with time consuming blowing off.
2 No Fome gives insurance and safety on every job, old or new.
3 No Fome insures satisfied customers.
4 No Fome is simply added to the boiler and your work is ended.
5 No Fome increases the efficiency of the installation.
6 No Fome changes a worry into a source of profit.
7 No Fome safeguards you against cracked boiler sections.
8 No Fome softens hard feed waters.
9 No Fome gives the best and simplest seasonal boiler cleaning.
10 No Fome gives you a "Fome-Proofed" job.

Order No Fome through your jobber or direct from us, sending your jobber's name so that we can bill through him. We will be glad to send you free of charge a sufficient supply to treat an installation up to 1½ sq. ft. grate area.

FEDERATED LABORATORIES, INC.
229 East 38th Street, New York City
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WRITE TODAY!

For Complete Information About the New—Advanced

GORTON SUREVENT
AIR VALVE

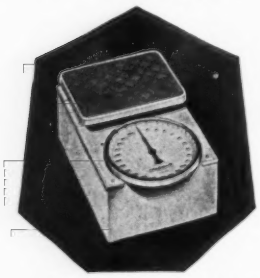
for ***Equalizing*** Steam Heating Systems

It will solve many of the tough problems to be met and will greatly increase heating efficiency.

Manufactured and Guaranteed by

GORTON HEATING CORPORATION
96 Liberty St. New York

You always make more money
on



HANSON
WEIGH MASTER
BATH ROOM SCALES

Superior non-tipping scales, finished in beautiful colors to harmonize with modern bath rooms. Send for prices.

HANSON SCALE COMPANY, 546 N. Ada St. Chicago

Telephone: Lawndale 1850-1851

Ingot Brass
Smelters and Refiners

High Quality Metals

Metals made up to specifications.

R. LAVIN & SONS
2511-2525 W. 21st St.

John Hartman, Sales Mgr. **Chicago, Ill.**

IMPROVED
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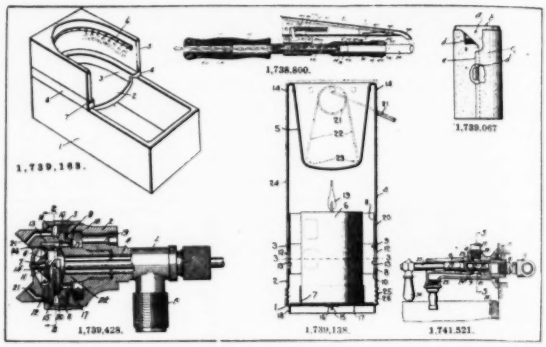
1,739,163. Bath Attachment. Thomas W. Mitchell, Indianapolis, Ind.



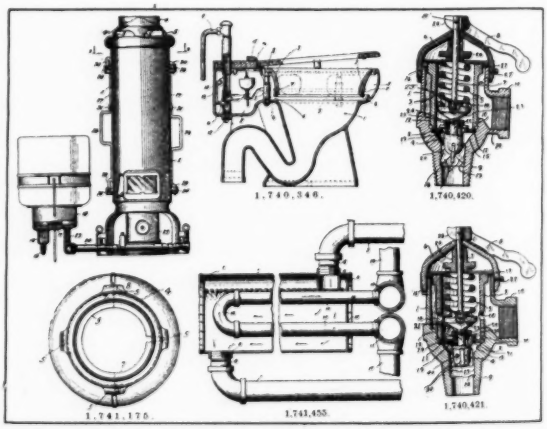
1,739,067. Protective Plug for Drainage Fixtures. Wells S. Fleming, Portland, Oreg.

1,738,521. Septic Sewage Disposal Plant. Luther James Bomhoff, Girard, Kans., assignor of one-half to Marion G. Slawson, Girard, Kans.

1,739,138. Water Heater. Bedros Giragosian, Watertown, Mass.

1,739,428. Spray Head. Robert W. Tracy, Toledo, Ohio, assignor to The De Vilbiss Company, Toledo, Ohio, a Corporation of Ohio.

1,738,800. Soldering Apparatus. John F. Schylander, Chicago, Ill.



1,741,455. Water Heating Apparatus. William Irwin Ferguson, Chicago, Ill.

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1,740,346. Arrangement in Water Closets. John Waldemar Henrekson, Stockholm, Sweden.

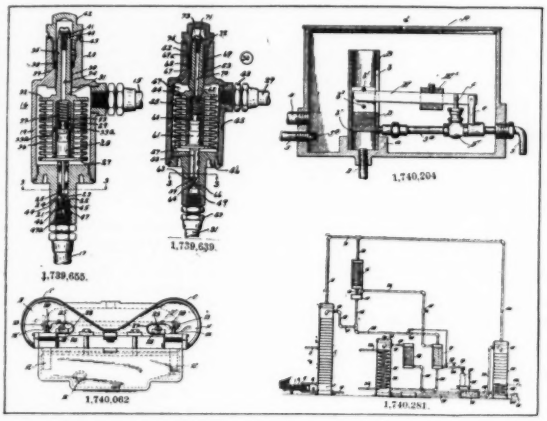
1,740,420. Relief Valve. Arthur Friedman, Cleveland, Ohio, assignor to The Cleveland Heater Co., Cleveland.

1,740,421. Relief Valve. Arthur Friedman, Cleveland, Ohio, assignor to The Cleveland Heater Co., Cleveland.

Heating Department

1,739,639. Refrigerating Apparatus. Jesse C. King, Dayton, Ohio, assignor to Frigidaire Corporation.

1,739,655. Refrigerating Apparatus. Sylvester M. Schweller, Dayton, Ohio, assignor to Frigidaire Corp.

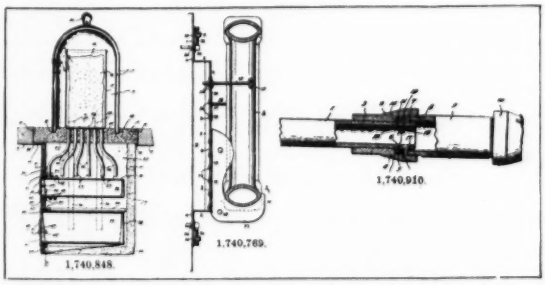


1,740,062. Oil Burner. Martin J. Binkley, East Orange, N. J., assignor to Caloroil Burner Corporation.

1,740,204. Method and Apparatus for Feeding Fuel. John Scheminger, Jr., Providence, R. I., assignor to Aetna Automatic Oil Burner, Incorporated, New York, N. Y.

1,740,281. Refrigerating System. Samuel C. Carney, Tulsa, Okla., assignor to Shell Petroleum Corporation.

1,740,769. Pipe and Radiator Support. Jerry A. Faber, Hawthorne, N. J.



1,740,848. Refrigerating Unit for Attachment to Ice Boxes. Miner P. Wetmore, Norwich, Conn.

1,740,910. Pipe Union. R. G. Stallard, Centralia, Wash.

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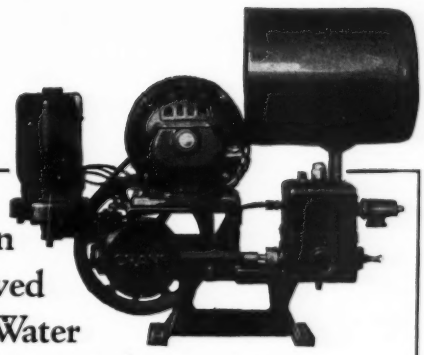

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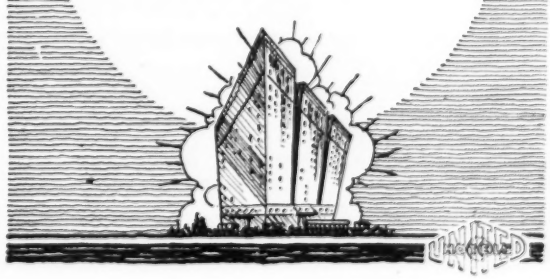

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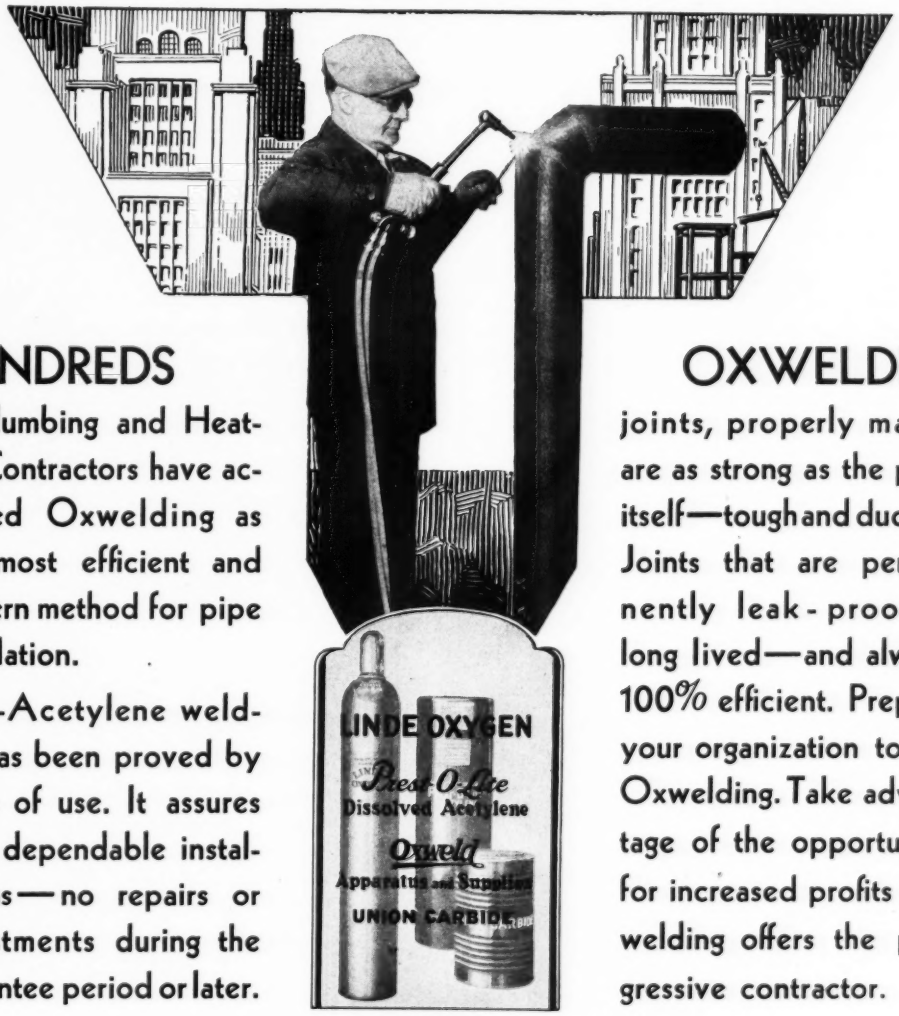

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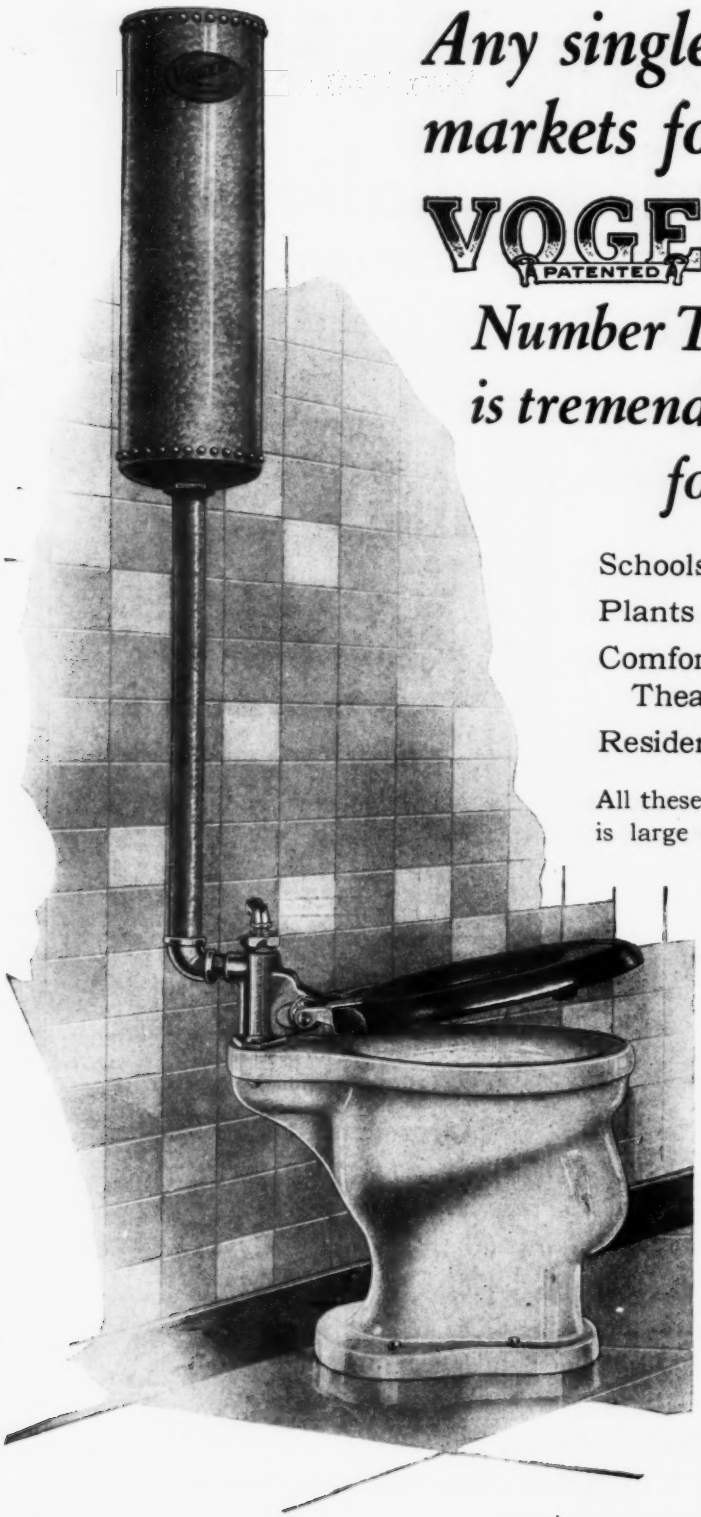

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